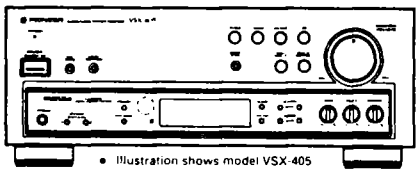
PIONEER
The Art of Entertainment

Service Manual



• Illustration shows model VSX-405

ORDER NO.
RRV1467

AUDIO/VIDEO STEREO RECEIVER

VSX-405
VSX-305

THIS MANUAL IS APPLICABLE TO THE FOLLOWING MODEL(S) AND TYPE(S).

Type	Model		Power Requirement	Remarks
	VSX-405	VSX-305		
KUXJ	O	O	AC120V	
KCXJ	O	O	AC120V	

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T-SSM JAN. 1996 Printed in Japan

1. SAFETY INFORMATION

This service manual is intended for qualified service technicians; it is not meant for the casual do-it-yourselfer. Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual.
Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty. If you are not qualified to perform the repair of this product properly and safely, you should not risk trying to do so and refer the repair to a qualified service technician.

WARNING

Lead in solder used in this product is listed by the California Health and Welfare agency as a known reproductive toxicant which may cause birth defects or other reproductive harm (California Health & Safety Code, Section 25249.5).
When servicing or handling circuit boards and other components which contain lead in solder, avoid unprotected skin contact with the solder. Also, when soldering do not inhale any smoke or fumes produced.

NOTICE
(FOR CANADIAN MODEL ONLY)
Fuse symbols (fast operating fuse) and/or (slow operating fuse) on PCB indicate that replacement parts must be of identical designation.

REMARQUE
(POUR MODÈLE CANADIEN SEULEMENT)
Les symboles de fusible (fusible de type rapide) et/ou (fusible de type lent) sur CCI indiquent que les pièces de remplacement doivent avoir la même désignation.

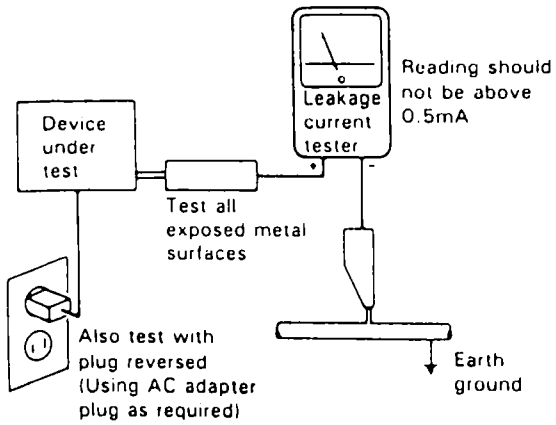
(FOR USA MODEL ONLY)

1. SAFETY PRECAUTIONS

The following check should be performed for the continued protection of the customer and service technician.

LEAKAGE CURRENT CHECK

Measure leakage current to a known earth ground (water pipe, conduit, etc.) by connecting a leakage current tester such as Simpson Model 229-2 or equivalent between the earth ground and all exposed metal parts of the appliance (input/output terminals, screwheads, metal overlays, control shaft, etc.). Plug the AC line cord of the appliance directly into a 120V AC 60Hz outlet and turn the AC power switch on. Any current measured must not exceed 0.5mA.


Reading should not be above 0.5mA
Leakage current tester
Device under test
Test all exposed metal surfaces
Also test with plug reversed (Using AC adapter plug as required)
Earth ground

AC Leakage Test

ANY MEASUREMENTS NOT WITHIN THE LIMITS OUTLINED ABOVE ARE INDICATIVE OF A POTENTIAL SHOCK HAZARD AND MUST BE CORRECTED BEFORE RETURNING THE APPLIANCE TO THE CUSTOMER.

2. PRODUCT SAFETY NOTICE

Many electrical and mechanical parts in the appliance have special safety related characteristics. These are often not evident from visual inspection nor the protection afforded by them necessarily can be obtained by using replacement components rated for voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in this Service Manual.

Electrical components having such features are identified by marking with a ⚠ on the schematics and on the parts list in this Service Manual.
The use of a substitute replacement component which dose not have the same safety characteristics as the PIONEER recommended replacement one, shown in the parts list in this Service Manual, may create shock, fire, or other hazards.

Product Safety is continuously under review and new instructions are issued from time to time. For the latest information, always consult the current PIONEER Service Manual. A subscription to, or additional copies of, PIONEER Service Manual may be obtained at a nominal charge from PIONEER.

2. EXPLODED VIEWS, PACKING AND PARTS LIST

NOTES:

- *Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the parts. Therefore, when replacing, be sure to use parts of identical designation.*
- *Parts marked by " ⊙ " are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.*

2.1 PACKING

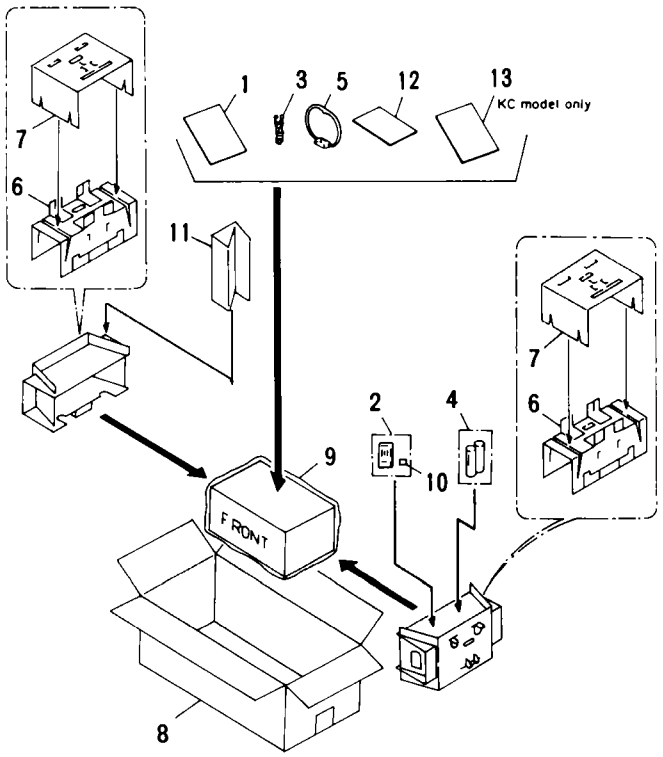
■ CONTRAST OF VSX-405/KUXJ, KCXJ, VSX-305/KUXJ AND KCXJ

VSX-405/KUXJ, KCXJ, VSX-305/KUXJ and KCXJ have the same construction except for the following:

Mark	No.	Symbol & Description	Part No.				Remarks
			VSX-405		VSX-305		
			KUXJ	KCXJ	KUXJ	KCXJ	
NSP	8	Packing Case	AHD7268	AHD7268	AHD7263	AHD7263	
	12	Warranty Card	ARY1051	ARY1075	ARY1051	ARY1075	
	13	Operating Instructions (French)	Not Used	ARC7104	Not Used	ARC7104	

■ PARTS LIST FOR VSX-405/KUXJ

Mark	No.	Description	Part No.
	1	Operating Instructions (English)	ARB7065
	2	Remote Control Unit (CU-VSX105)	AXD7083
	3	FM Antenna	ADH1017
NSP	4	Battery (R6P, AA)	VEM-013
	5	Loop Antenna	ATB7004
	6	Pad Side A	AHA7119
	7	Pad Side B	AHA7120
	8	Packing Case	AHD7268
	9	Packing Sheet	AHG1218
	10	Battery Cover	AZA7123
	11	Sub Pad	AHA7051
NSP	12	Warranty Card	ARY1051
	13	· · · · ·	



2.2 EXTERIOR

■ CONTRAST OF VSX-405/KUXJ, KCXJ, VSX-305/KUXJ AND KCXJ

VSX-405/KUXJ, KCXJ, VSX-305/KUXJ and KCXJ have the same construction except for the following:

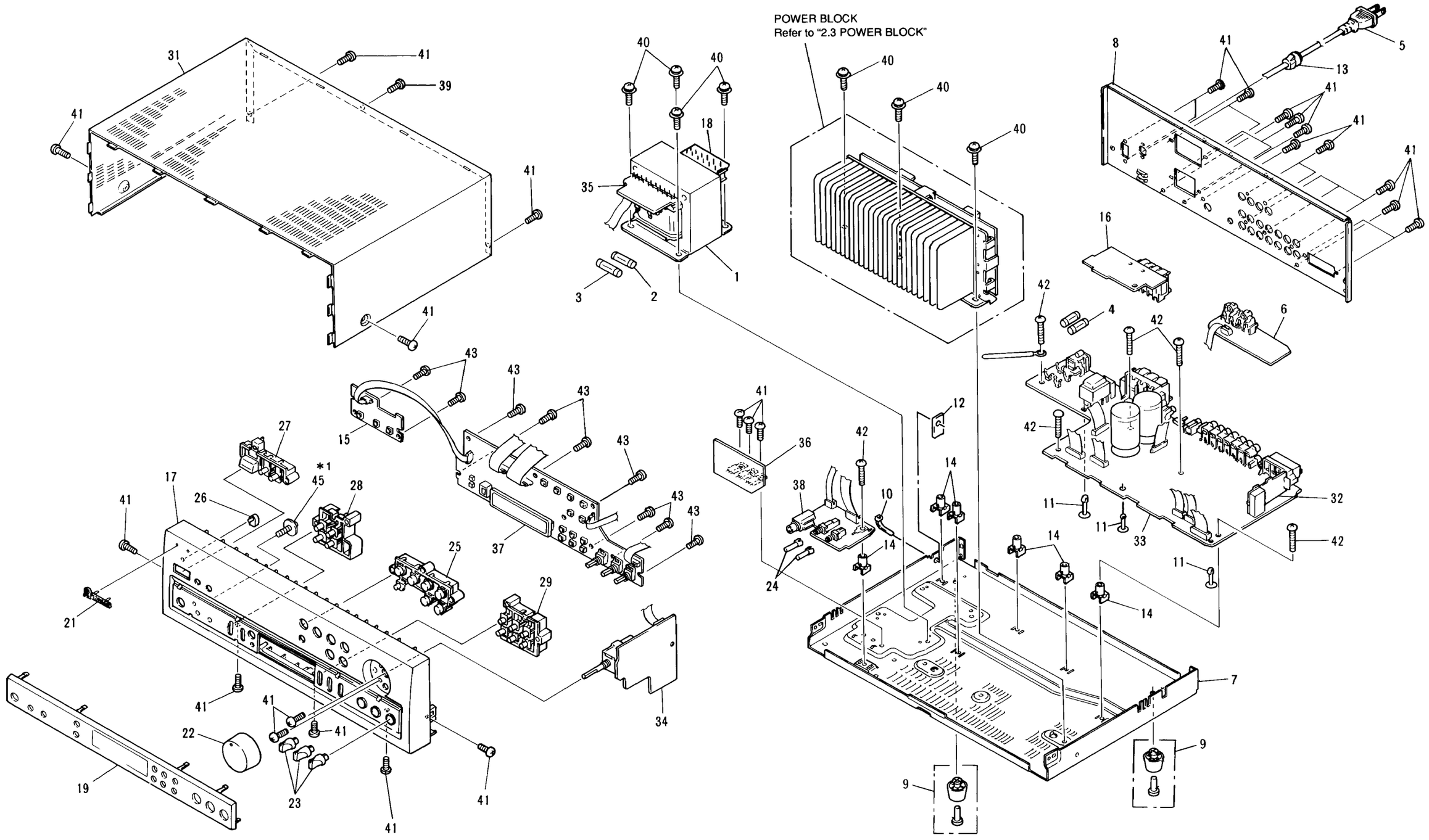
Mark	No.	Symbol & Description	Part No.				Remarks
			VSX-405		VSX-305		
			KUXJ	KCXJ	KUXJ	KCXJ	
⚠	1	Power Transformer (T1)	ATS7108	ATS7109	ATS7112	ATS7113	
	8	Rear Panel	ANC7341	ANC7388	ANC7337	ANC7389	
	17	Front Panel	AMB7334	AMB7334	AMB7329	AMB7329	
	33	MOTHER Assy	AWZ8053	AWZ8053	AWZ8056	AWZ8056	

■ PARTS LIST FOR VSX-405/KUXJ

Mark	No.	Description	Part No.
⚠	1	Power Transformer (T1)	ATS7108
⚠	2	Fuse (1A, FU3)	REK1075
⚠	3	Fuse (1A, FU4)	REK1075
⚠	4	Fuse (6.3A, FU1)	REK1085
⚠	5	AC Power Cord	PDG1015
	6	VIDEO Assy	AWZ8066
NSP	7	Chassis	ANA7042
	8	Rear Panel	ANC7341
	9	Foot	AEC1505
NSP	10	Binder	Z09-BK1
	11	PCB Support	AEC1581
NSP	12	BINDING Assy	AWZ8370
	13	Cord Stopper	CM-22C
	14	PCB Mold	AMR2533
	15	ST. IND. Assy	AWZ8065
	16	FRONT SP. Assy	AWZ8080
	17	Front Panel	AMB7334
NSP	18	PRIMARY Assy	AWZ8368
	19	FL Panel	AAK7237
	20	· · · · ·	
	21	Name Plate	PAM1608
	22	Round Knob L	AAB7082
	23	Round Knob S	AAB7083
	24	Push Button	AAD7282
	25	Function Button	AAD7281
	26	LED Lens	PNW2019
	27	Power Button	AAD7278
	28	Hinge Button A	AAD7279
	29	Hinge Button B	AAD7280
	30	· · · · ·	
	31	Bonnet Case	ANE7102
	32	FM/AM TUNER MODULE	AXQ1002
	33	MOTHER Assy	AWZ8053
	34	VOL. Assy	AWZ8078
	35	TRANS Assy	AWZ8072
	36	REG. Assy	AWZ8067
	37	FL AND UCOM Assy	AWZ8060
	38	SP. SW AND H.P Assy	AWZ8068
	39	Screw	BCZ30P080FZK
	40	Screw	ABA7019
	41	Screw	BBZ30P080FZK
	42	Screw	BBZ30P200FMC
	43	Screw	BPZ26P080FMC
NSP	44	Washer	AEE7002
	45	Screw	ABA7009

Exterior

NOTE: Screws adjacent to ▼ mark on the product are used for disassembly



Note *1: Screw for fixing the headphone jack.

2.3 POWER BLOCK

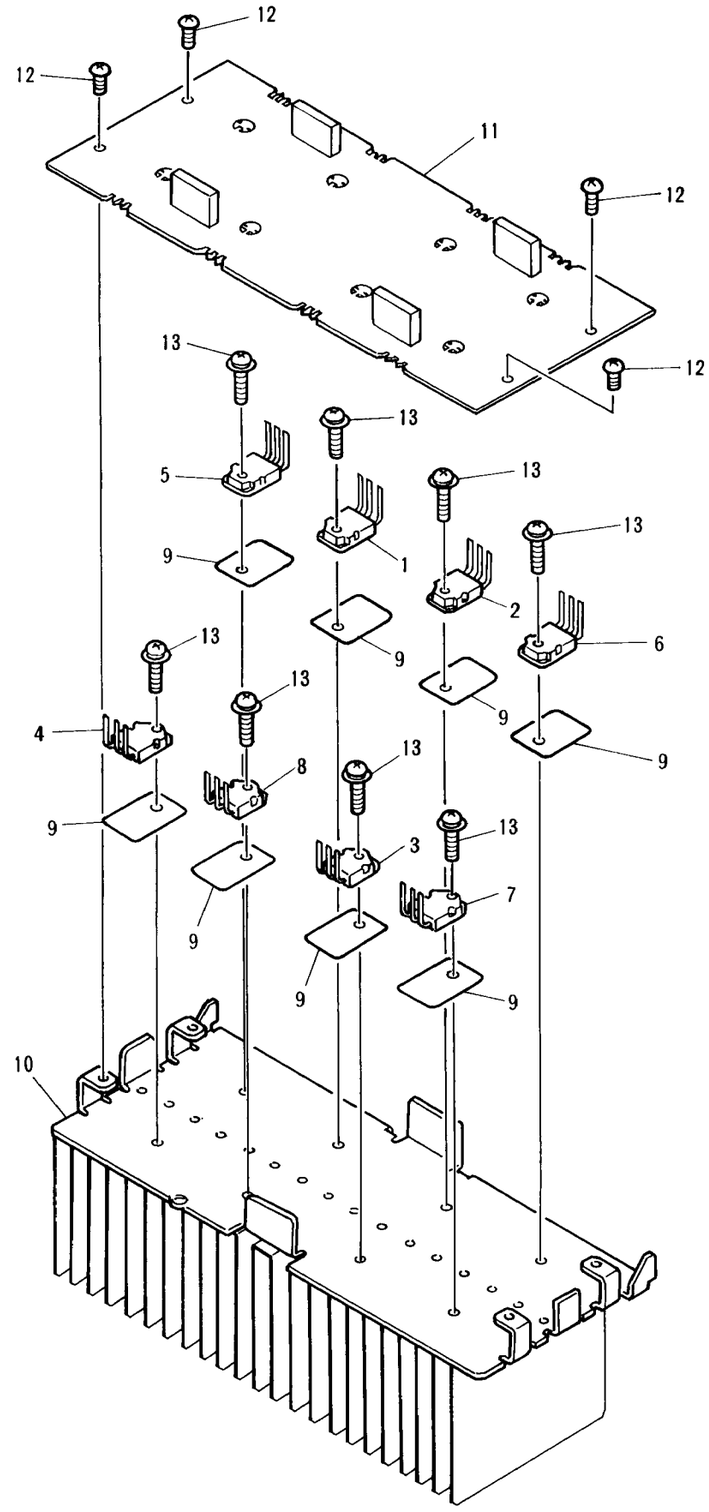
■ CONTRAST OF VSX-405/KUXJ, KCXJ, VSX-305/KUXJ AND KCXJ

VSX-405/KUXJ, KCXJ, VSX-305/KUXJ and KCXJ have the same construction except for the following:

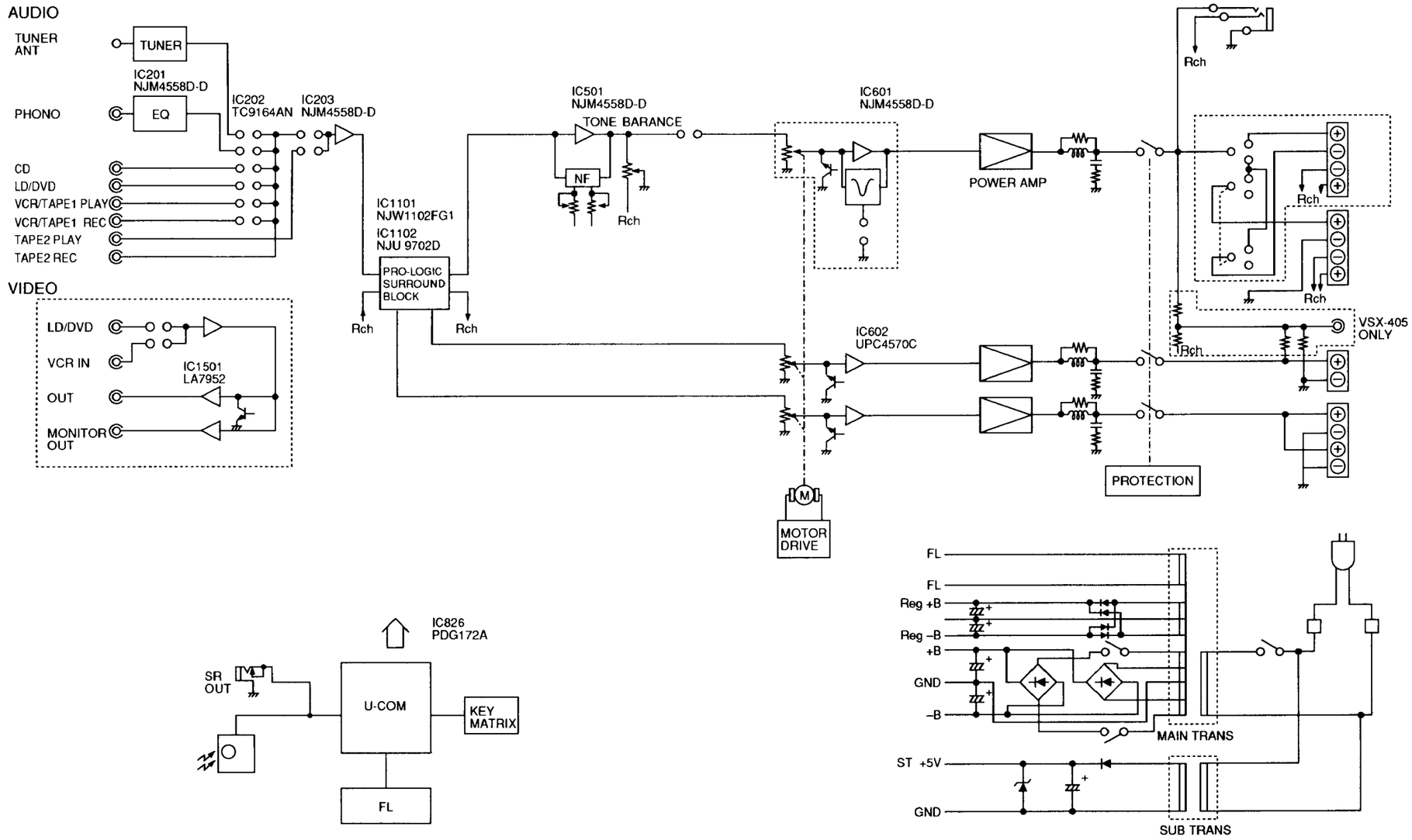
Mark	No.	Symbol & Description	Part No.				Remarks
			VSX-405		VSX-305		
			KUXJ	KCXJ	KUXJ	KCXJ	
⚠	1	Transistor (Q2)	2SC5200	2SC5200	2SC5198	2SC5198	
⚠	2	Transistor (Q1)	2SC5200	2SC5200	2SC5198	2SC5198	
⚠	3	Transistor (Q11)	2SC5200	2SC5200	2SC5198	2SC5198	
⚠	4	Transistor (Q14)	2SA1943	2SA1943	2SA1941	2SA1941	
⚠	5	Transistor (Q4)	2SA1943	2SA1943	2SA1941	2SA1941	
⚠	6	Transistor (Q3)	2SA1943	2SA1943	2SA1941	2SA1941	
⚠	7	Transistor (Q13)	2SA1943	2SA1943	2SA1941	2SA1941	
⚠	8	Transistor (Q12)	2SC5200	2SC5200	2SC5198	2SC5198	
	11	AMP Assy	AWZ8074	AWZ8074	AWZ8075	AWZ8075	

■ PARTS LIST FOR VSX-405/KUXJ

Mark	No.	Description	Part No.
⚠	1	Transistor (Q2)	2SC5200
⚠	2	Transistor (Q1)	2SC5200
⚠	3	Transistor (Q11)	2SC5200
⚠	4	Transistor (Q14)	2SA1943
⚠	5	Transistor (Q4)	2SA1943
⚠	6	Transistor (Q3)	2SA1943
⚠	7	Transistor (Q13)	2SA1943
⚠	8	Transistor (Q12)	2SC5200
	9	Sheet	AEE1014
NSP	10	Radiator	ANH7037
	11	AMP Assy	AWZ8074
	12	Screw	BBZ30P080FZK
	13	Screw	ABA1037

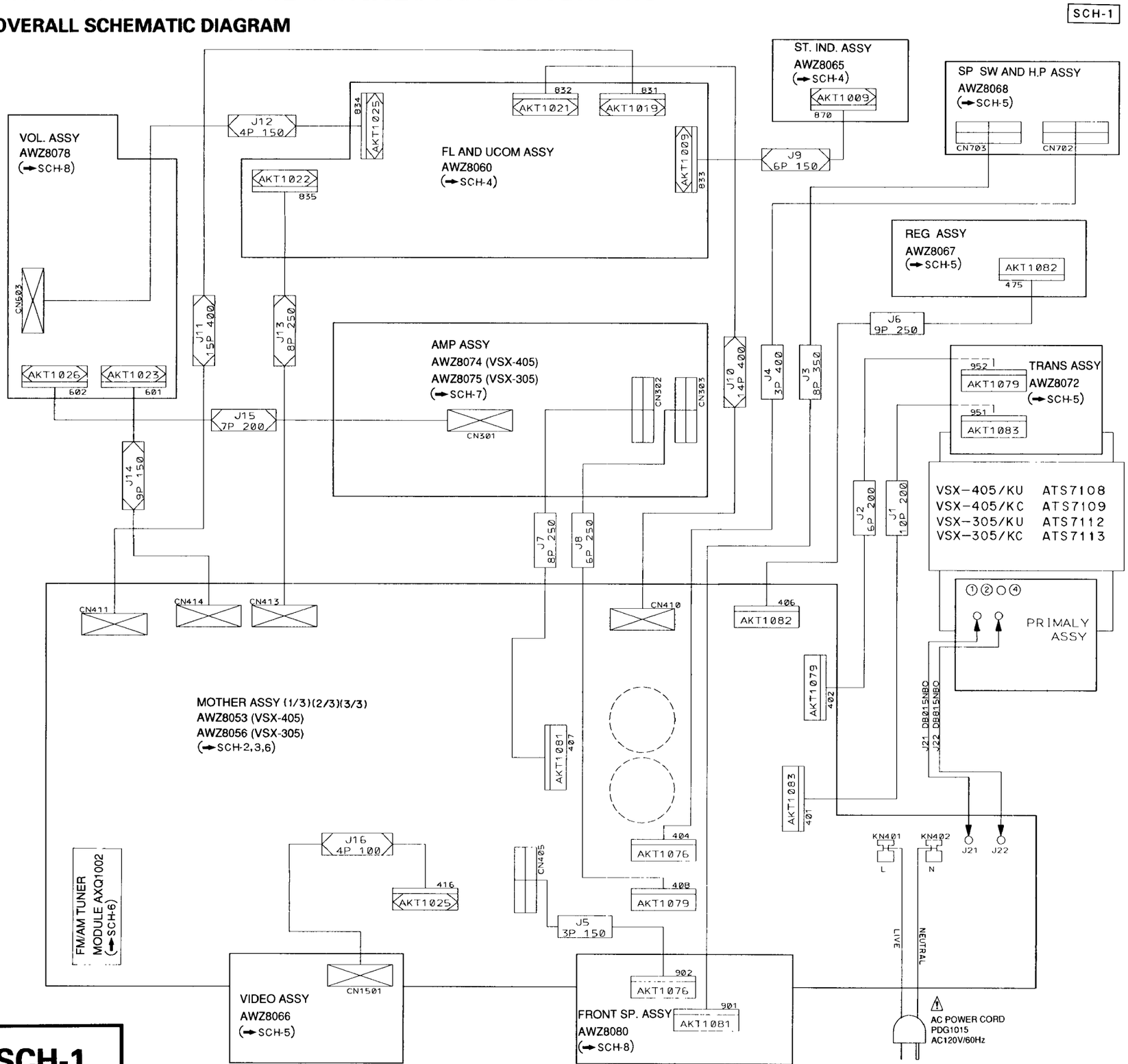


3. BLOCK DIAGRAM



4. SCHEMATIC AND PCB CONNECTION DIAGRAMS

4.1 OVERALL SCHEMATIC DIAGRAM



SCH-1 OVERALL SCHEMATIC DIAGRAM

NOTE FOR SCHEMATIC DIAGRAMS (Type 1A)

1. **When ordering service parts, be sure to refer to "PARTS LIST of EXPLODED VIEWS" or "PCB PARTS LIST".**
2. **Since these are basic circuits, some parts of them or the values of some components may be changed for improvement.**
3. **RESISTORS.**
   Unit: k:kΩ, M.MΩ, or Ω unless otherwise noted.
   Rated power: 1/4W, 1/6W, 1/8W, 1/10W unless otherwise noted.
   Tolerance: (F): ±1%, (G): ±2%, (K): ±10%, (M): ±20% or ±5% unless otherwise noted
4. **CAPACITORS:**
   Unit. p.pF or μF unless otherwise noted
   Ratings: capacitor (μF)/ voltage (V) unless otherwise noted.
   Rated voltage 50V except for electrolytic capacitors.
5. **COILS:**
   Unit: m·mH or μH unless otherwise noted
6. **VOLTAGE AND CURRENT:**
   V : Signal voltage at rated output
   or ← V :
   DC voltage (V) at no input signal unless otherwise noted.
   Value in ( ) is DC voltage at rated power.
   ⇦ mA or ← mA :
   DC current at no input signal unless otherwise noted
7. **OTHERS:**
   - ⊘ or ⊘ : Adjusting point.
   - : Measurement point.
   - The ⚠ mark found on some component parts indicates the importance of the safety factor of the parts. Therefore, when replacing, be sure to use parts of identical designation.
8. **SCH—□ ON THE SCHEMATIC DIAGRAM.**
   - SCH—□ indicates the drawing number of the schematic diagram. (SCH stands for schematic diagram.)
9. **SWITCHES** (Underline indicates switch position)·

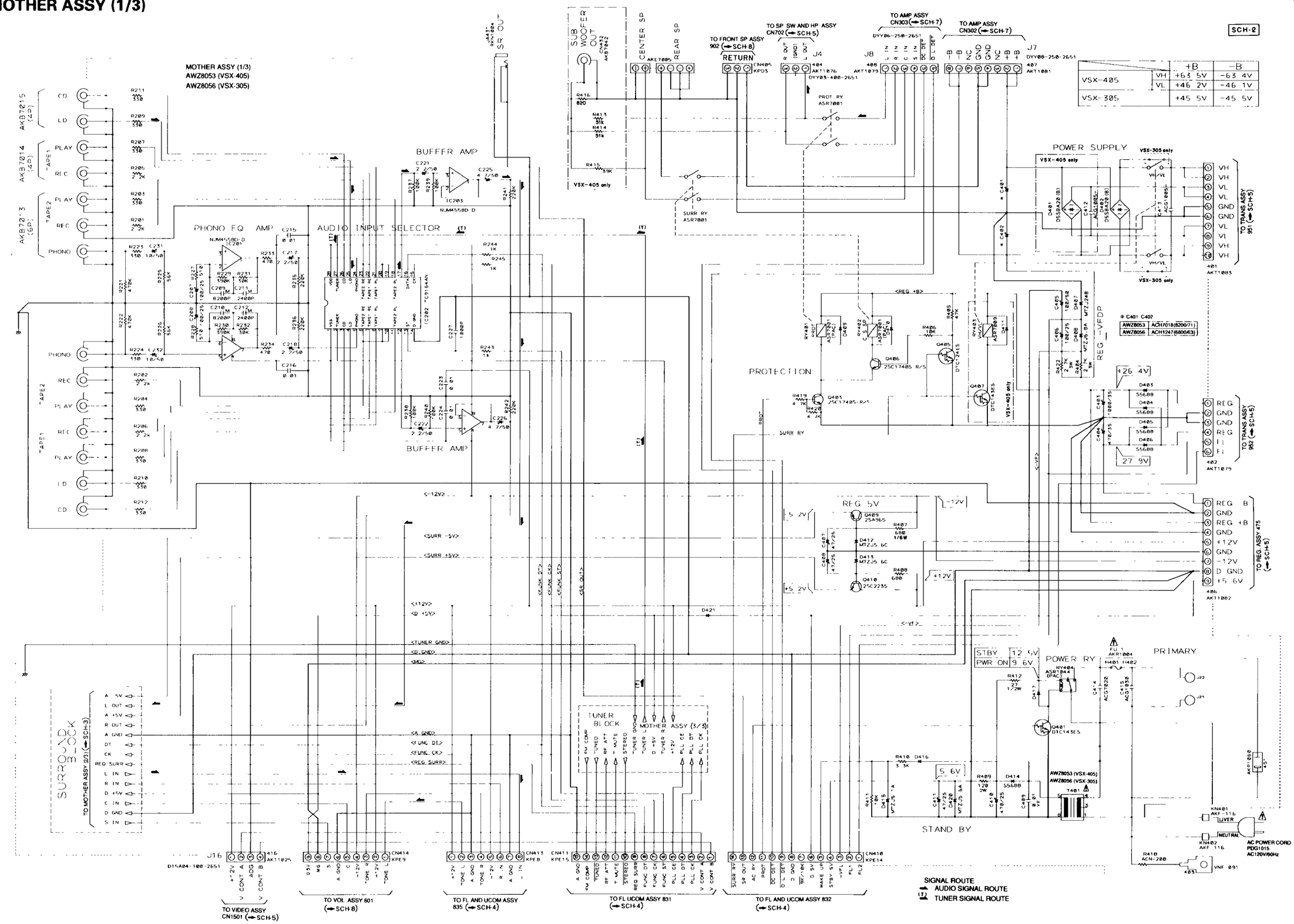
ST IND. ASSY
S876 · POWER STANDBY/ON
S877 : SFC MODE
S878 DOLBY PRO LOGIC

FL AND UCOM ASSY
S825 . STATION +
S826 : STATION –
S827 : CLASS
S829 · MPX MODE
S830 : TUNING +
S831 : TUNING –
S832 . FM/AM
S835 · TAPE 2 MONITOR
S836 VCR/TAPE 1
S837 . SUPER BASS
S839 MEMORY
S840 . CD
S841 · LD/DVD
S842 . TUNER
S843 : PHONO

SP SW AND HP. ASSY
S701 . SPEAKER A OFF/ON
S702 : SPEAKER B OFF/ON

OVERALL SCHEMATIC DIAGRAM **SCH-1**

4.2 MOTHER ASSY (1/3)



		+B	−B
VSX-405	VH	+63.5V	−63.4V
	VL	+46.2V	−46.1V
VSX-305		+45.5V	−45.5V

● C401 C402

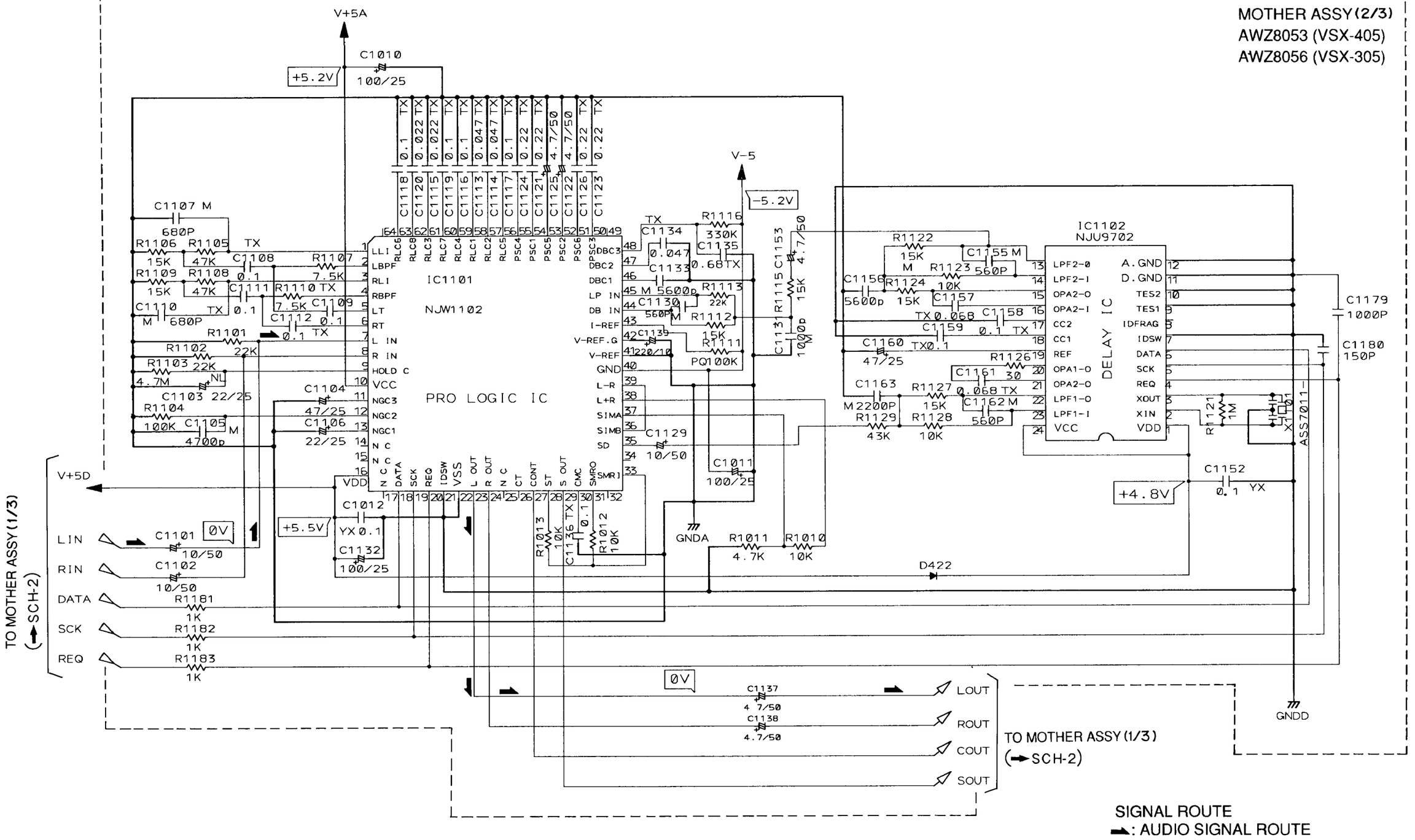
AWZ8053	ACH7018(8200/71)
AWZ8056	ACH1247(6800/63)

● NOTE FOR FUSE REPLACEMENT

CAUTION – FOR CONTINUED PROTECTION AGAINST RISK OF FIRE, REPLACE ONLY WITH SAME TYPE AND RATINGS ONLY

4.3 MOTHER ASSY (2/3)

SCH-3

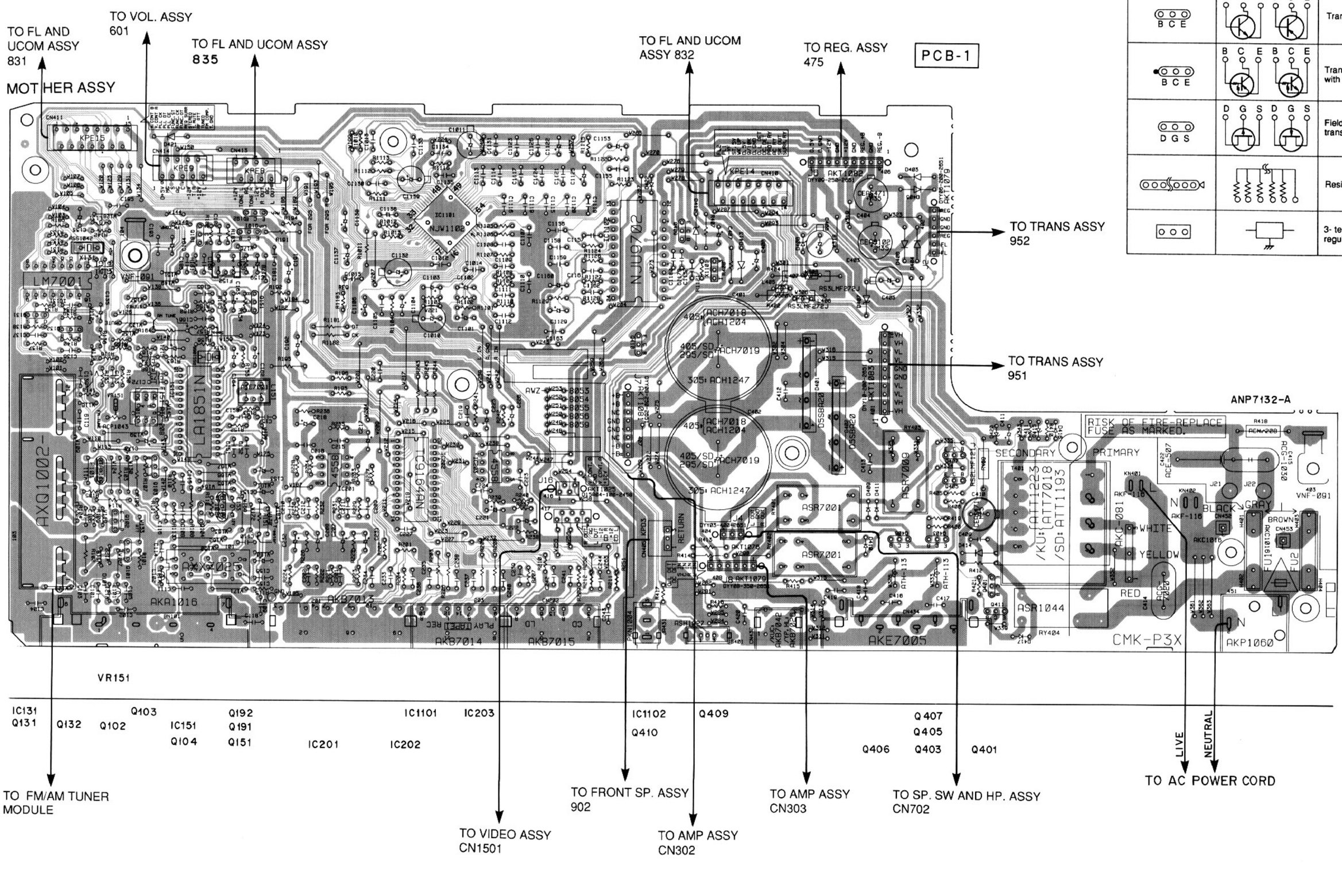


- The parts mounted on this PCB include all necessary parts for several destinations. For further information for respective destinations, be sure to check with the schematic diagram.

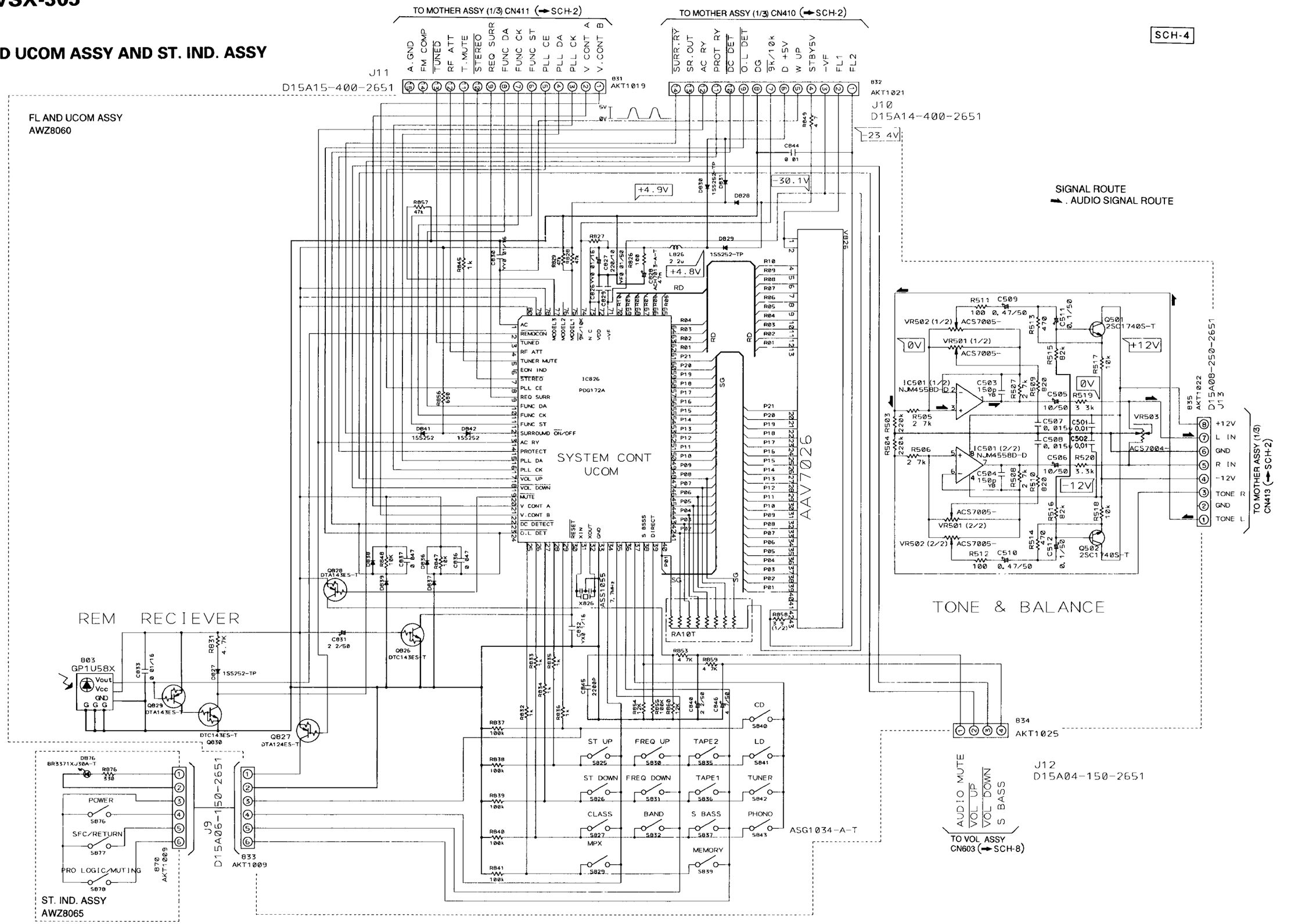
- This diagram is viewed from the mounted parts side.

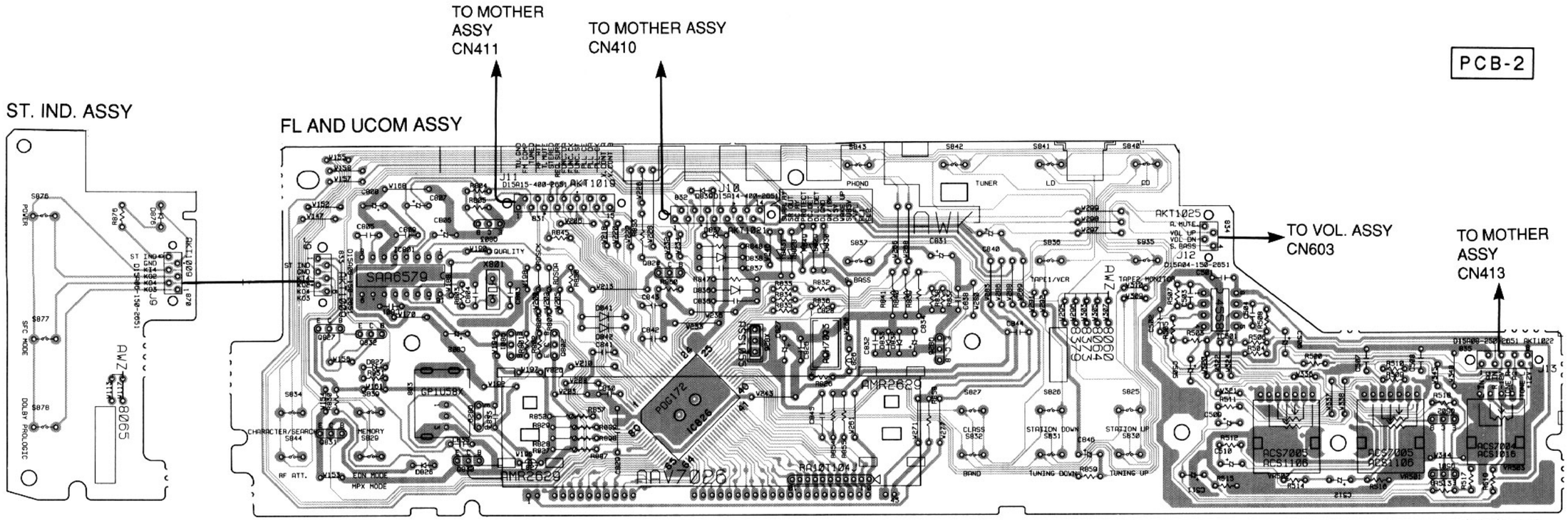
1. Part numbers in PCB diagrams match those in the schematic diagrams.
2. A comparison between the main parts of PCB and schematic diagrams is shown below.

Symbol in PCB Diagrams	Symbol in Schematic Diagrams	Part Name
B C E	B C E	Transistor
B C E	B C E B C E	Transistor with resistor
D G S	D G S D G S	Field effect transistor
		Resistor array
		3- terminal regulator



4.4 FL AND UCOM ASSY AND ST. IND. ASSY



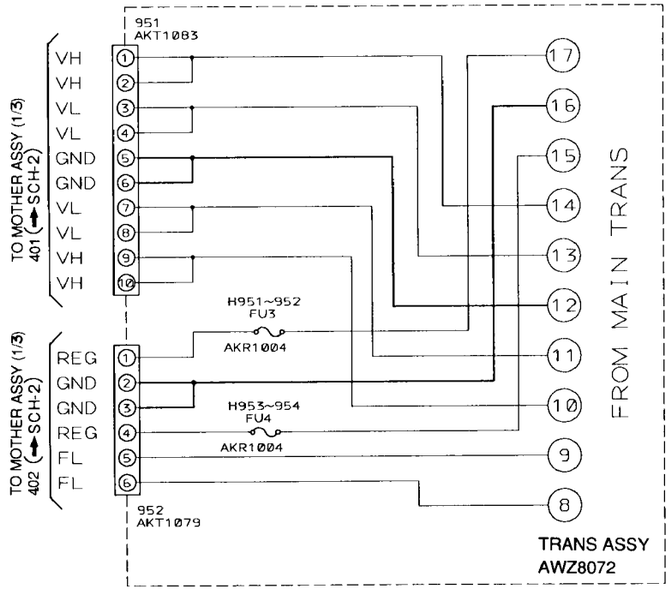


VR502 VR501 VR503

Q827 Q829 Q830 Q828 IC826 Q326 IC501

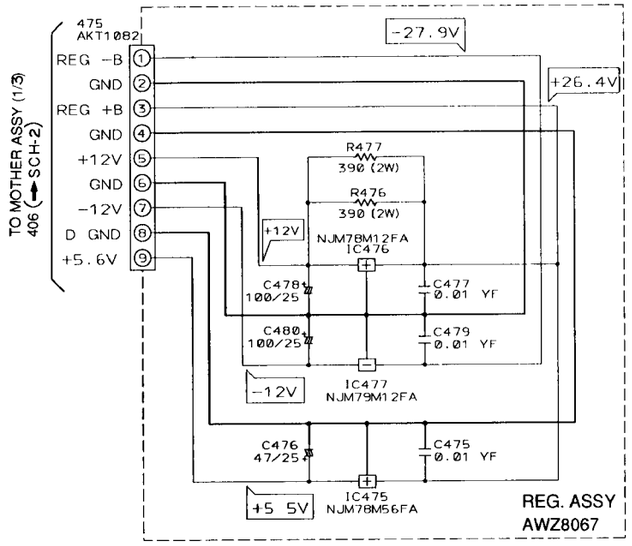
- The parts mounted on this PCB include all necessary parts for several destinations. For further information for respective destinations, be sure to check with the schematic diagram.
- This diagram is viewed from the mounted parts side.

4.5 SP. SW AND HP. ASSY, VIDEO ASSY, TRANS ASSY AND REG. ASSY

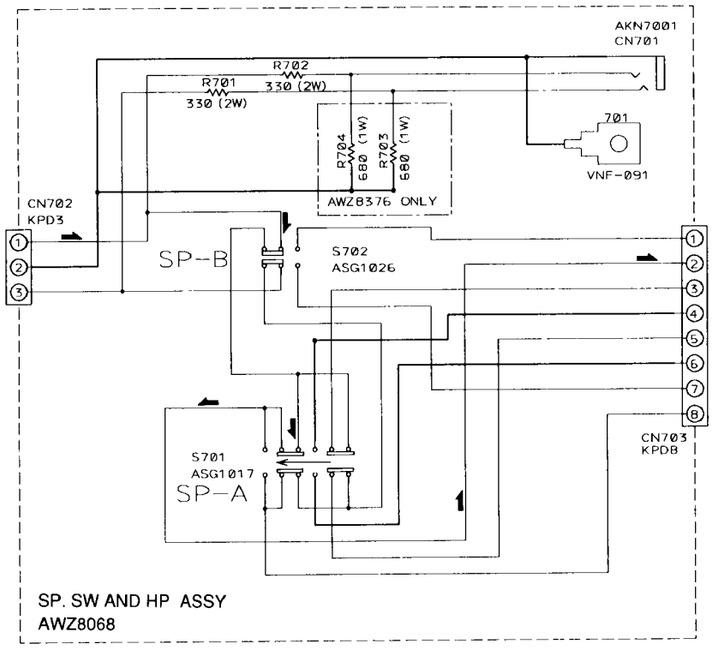


● NOTE FOR FUSE REPLACEMENT

CAUTION – FOR CONTINUED PROTECTION AGAINST RISK OF FIRE, REPLACE ONLY WITH SAME TYPE AND RATINGS ONLY.



SCH-5

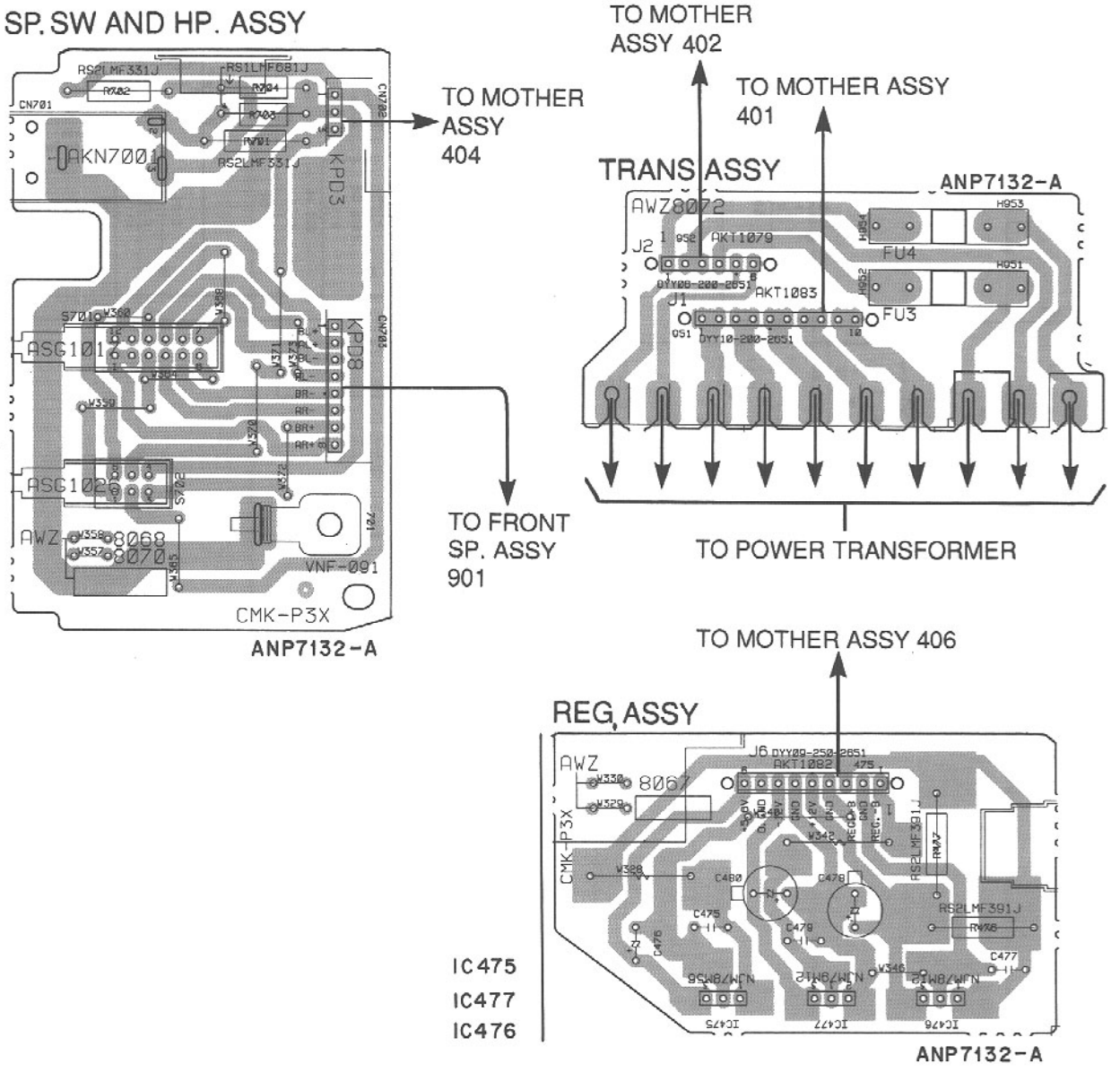


SIGNAL ROUTE
➡: AUDIO SIGNAL ROUTE
⇨: VIDEO SIGNAL ROUTE

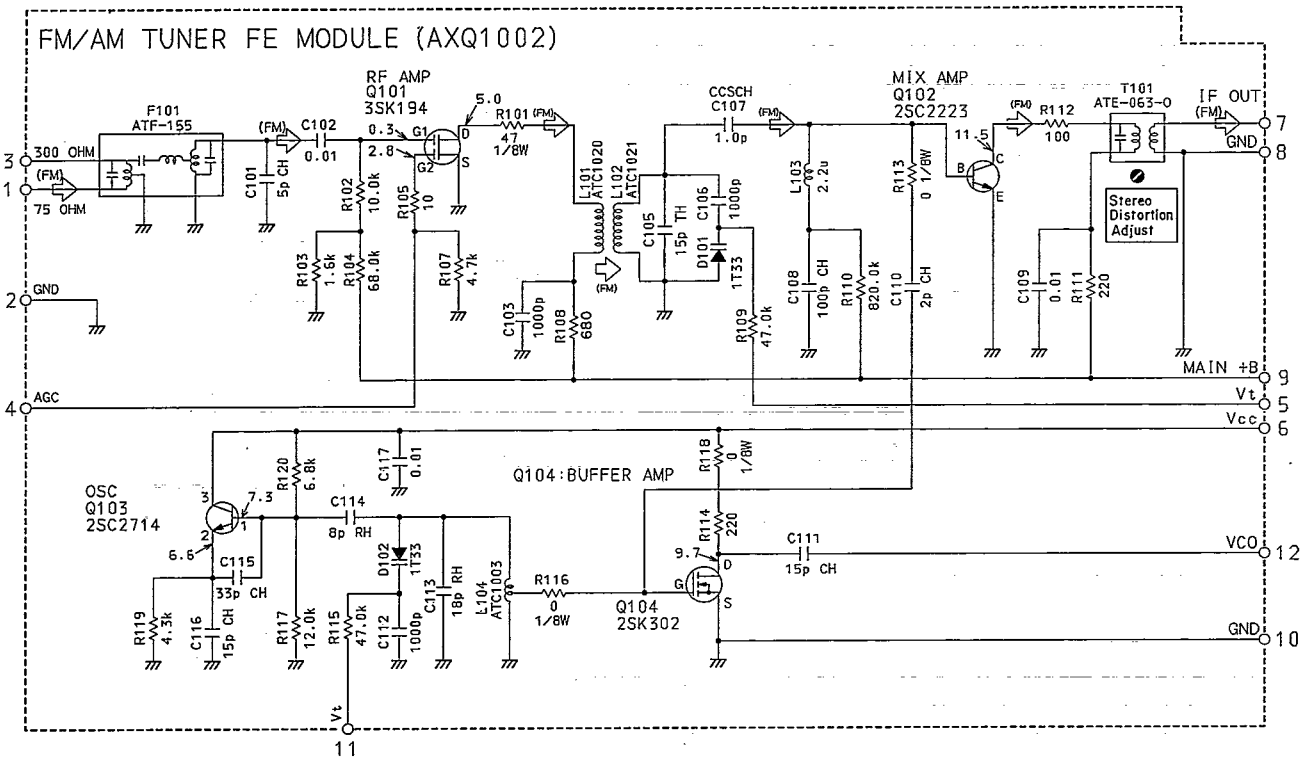
- The parts mounted on this PCB include all necessary parts for several destinations. For further information for respective destinations, be sure to check with the schematic diagram.

- This diagram is viewed from the mounted parts side.

PCB-3



4.6 MOTHER ASSY (3/3)



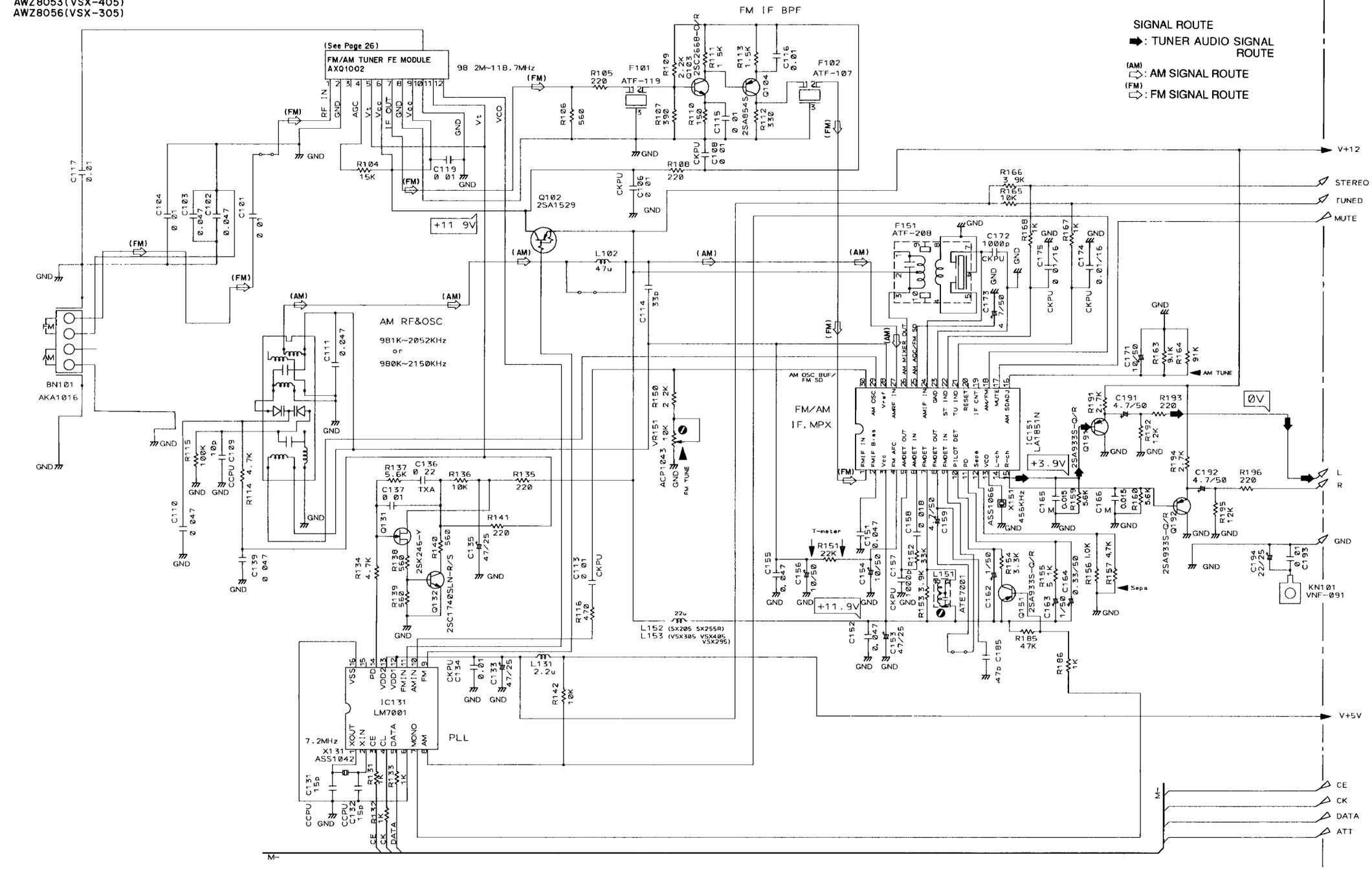
MOTHER ASSY (3/3)

SCH-6

MOTHER ASSY(3/3)
AWZ8053(VSX-405)
AWZ8056(VSX-305)

SCH-6

SIGNAL ROUTE
➡: TUNER AUDIO SIGNAL ROUTE
(AM) ⇨: AM SIGNAL ROUTE
(FM) ⇨: FM SIGNAL ROUTE



Noted

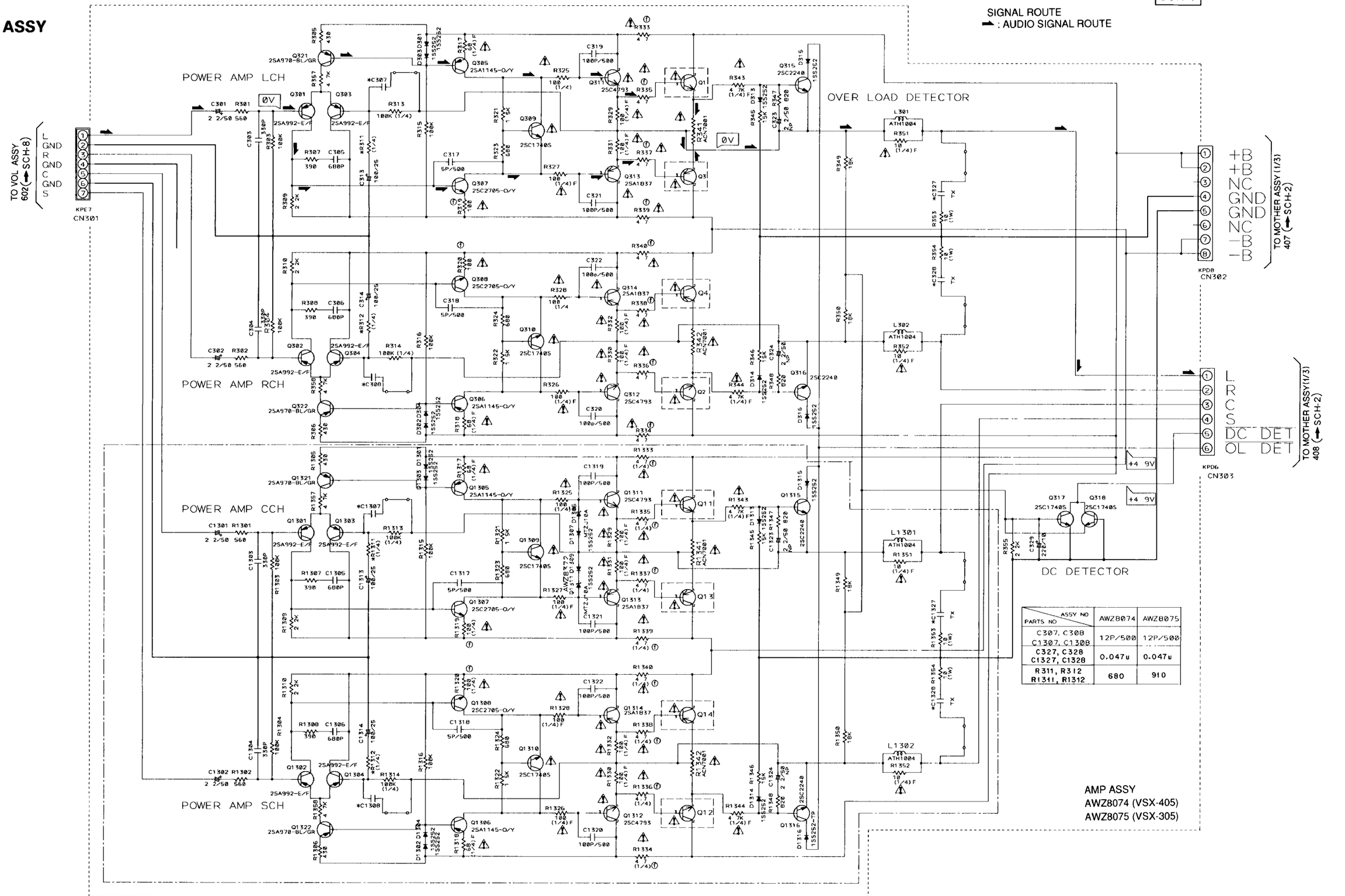
1 Resistors
Indicated in ohm 1/6W±5% tolerance unless otherwise noted
K Kohm , M Mohm

2 Capacitors
Indicated in capacity(uF)/voltage(V) unless otherwise noted
p=pF
Indication without voltae is 50V except electrolytic capacitor
M=CQMA⁻, TXA=CFTXA⁻

4.7 AMP ASSY

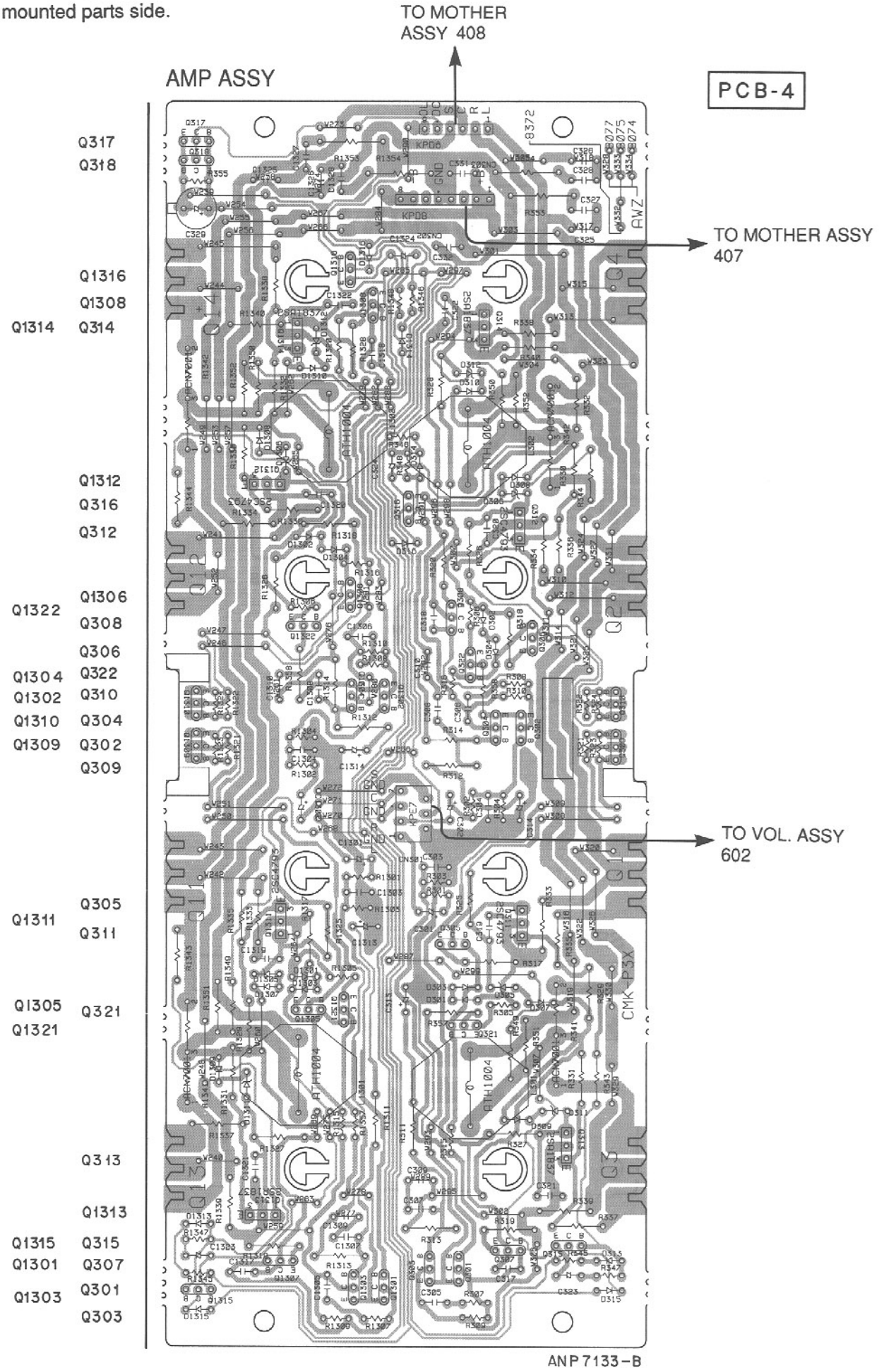
SCH-7

SIGNAL ROUTE
➡ : AUDIO SIGNAL ROUTE



PARTS NO \ ASSY NO	AWZ8074	AWZ8075
C307, C308 C1307, C1308	12P/500	12P/500
C327, C328 C1327, C1328	0.047u	0.047u
R311, R312 R1311, R1312	680	910

- This diagram is viewed from the mounted parts side.

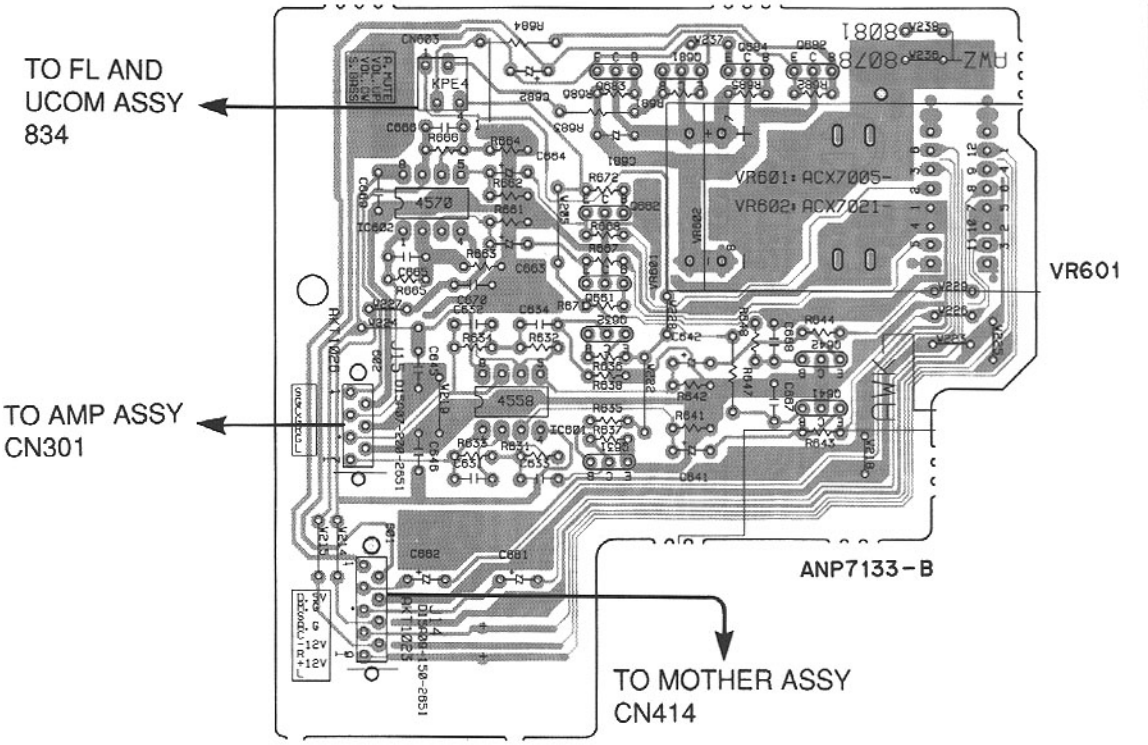


- This diagram is viewed from the mounted parts side.

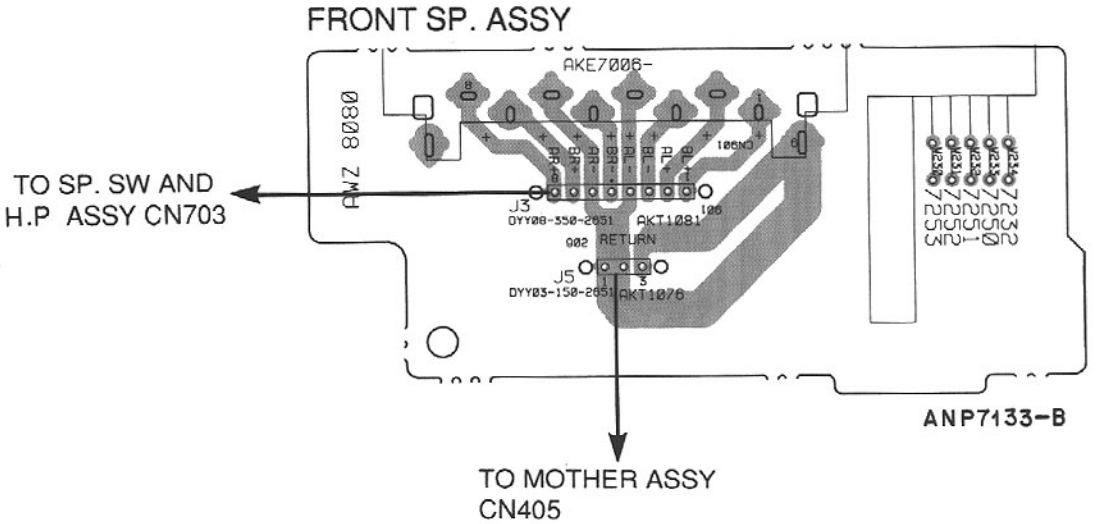
- The parts mounted on this PCB include all necessary parts for several destinations. For further information for respective destinations, be sure to check with the schematic diagram.

PCB-5

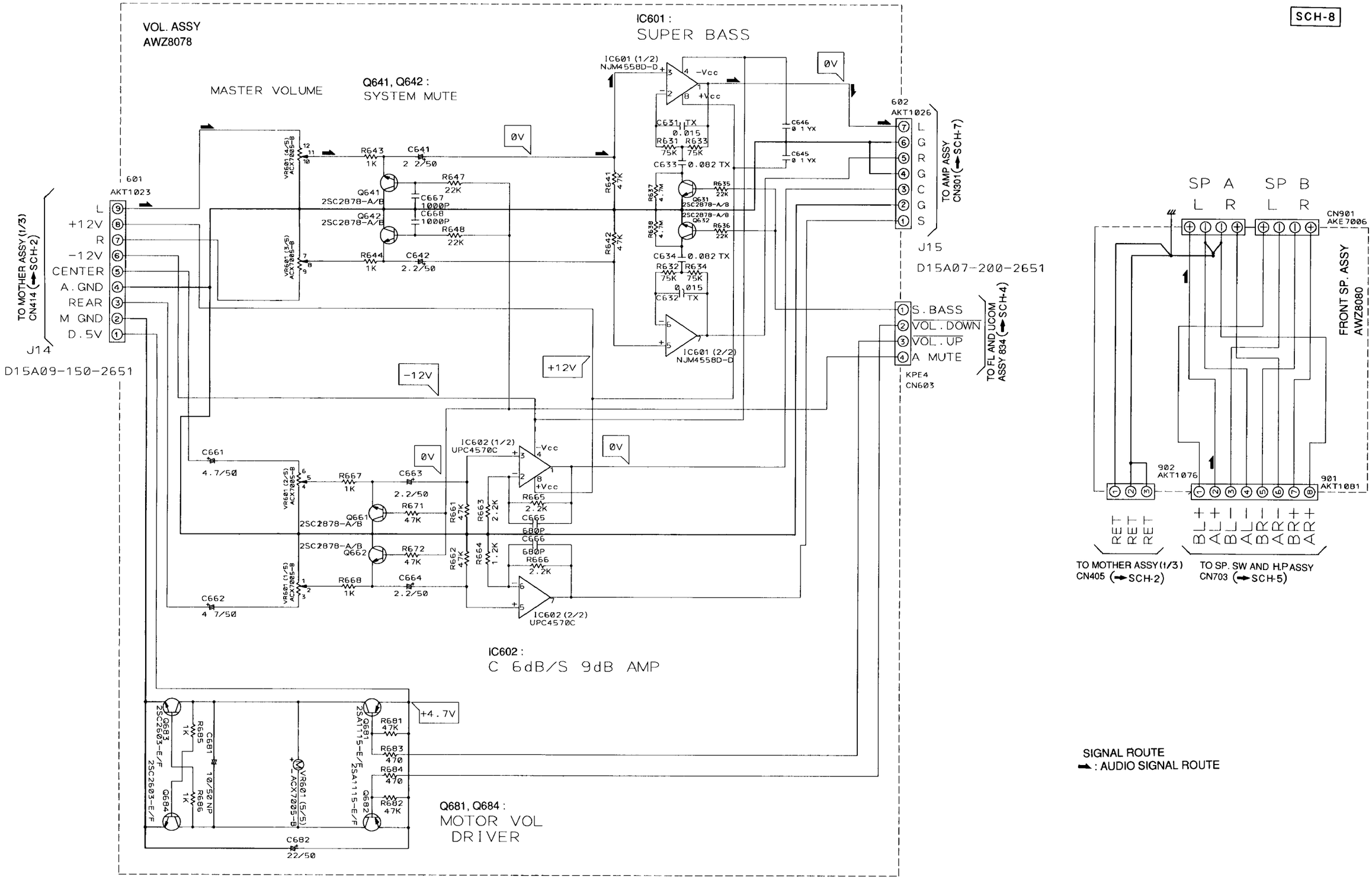
VOL. ASSY



FRONT SP. ASSY



4.8 VOL. ASSY AND FRONT SP. ASSY



5. PCB PARTS LIST

NOTES:

- *Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *Parts marked by "⊙" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.*
- *When ordering resistors, first convert resistance values into code form as shown in the following examples.*

Ex.1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47K ohm (tolerance is shown by J=5%, and K=10%).

560 Ω → 56 × 10¹ → 561 ..... RD1/4PU 5 6 1 J
47 kΩ → 47 × 10³ → 473 ..... RD1/4PU 4 7 3 J
0.5 Ω → 0R5 ..... RN2H 0 R 5 K
1 Ω → 1R0 ..... RS1P 1 R 0 K

Ex.2 When there are 3 effective digits (such as in high precision metal film resistors).

5.62 kΩ → 562 × 10¹ → 5621 ..... RN1/4PC 5 6 2 1 F

■ LIST OF WHOLE PCB ASSEMBLIES

Mark	PCB Assemblies	Part No.				Remarks
		VSX-405		VSX-305		
		KUXJ	KCXJ	KUXJ	KCXJ	
NSP	MAIN Assy	AWK7228	AWK7228	AWK7248	AWK7248	
	├ MOTHER Assy	AWZ8053	AWZ8053	AWZ8056	AWZ8056	
	└ FM/AM TUNER MODULE	AXQ1002	AXQ1002	AXQ1002	AXQ1002	
	├ FL AND UCOM Assy	AWZ8060	AWZ8060	AWZ8060	AWZ8060	
	├ ST. IND. Assy	AWZ8065	AWZ8065	AWZ8065	AWZ8065	
	├ VIDEO Assy	AWZ8066	AWZ8066	AWZ8066	AWZ8066	
	├ REG Assy	AWZ8067	AWZ8067	AWZ8067	AWZ8067	
	├ SP. SW AND H.P Assy	AWZ8068	AWZ8068	AWZ8068	AWZ8068	
	├ TRANS Assy	AWZ8072	AWZ8072	AWZ8072	AWZ8072	
NSP	├ PRIMARY Assy	AWZ8368	AWZ8368	AWZ8368	AWZ8368	*
NSP	└ BINDING Assy	AWZ8370	AWZ8370	AWZ8370	AWZ8370	*
NSP	AMP AND VOL. Assy	AWK7232	AWK7232	AWK7252	AWK7252	
	├ AMP Assy	AWZ8074	AWZ8074	AWZ8075	AWZ8075	
	├ VOL. Assy	AWZ8078	AWZ8078	AWZ8078	AWZ8078	
	└ FRONT SP. Assy	AWZ8080	AWZ8080	AWZ8080	AWZ8080	

Note * : Assembly only for printed boards without component parts.

■ CONTRAST OF PCB ASSEMBLIES

MOTHER ASSY

AWZ8053 and AWZ8056 have the same construction except for the following:

Mark	Symbol & Description	Part No.		Remarks
		AWZ8053	AWZ8056	
	Q407	DTC143ES	Not Used	
	D402	D5SBA20(B)	Not Used	
	D411	1SS252	Not Used	
	C401, C402	ACH7018	ACH1247	
	C413	ACG1005	Not Used	
	RY403	ASR7009	Not Used	
	R413, R414	RD1/4PU513J	Not Used	
	R415	RD1/4PU393J	Not Used	
	R416	RD1/4PU821J	Not Used	
	CN432	AKB7042	Not Used	

AMP ASSY

AWZ8074 and AWZ8075 have the same construction except for the following:

Mark	Symbol & Description	Part No.		Remarks
		AWZ8074	AWZ8075	
	R311, R312, R1311, R1312	RD1/4PM681J	RD1/4PM911J	

■ PARTS LIST FOR VSX-405/KUXJ

Mark	No.	Description	Part No.
MOTHER ASSY			
SEMICONDUCTORS			
	IC131	PLL IC	LM7001J
	IC151	AM/FM IC	LA1851N
	IC201	OP-AMP IC	NJM4558D-D
	IC202	E-SW IC	TC9164AN
	IC203	OP-AMP IC	NJM4558D-D
	IC1101	DOLBY-PROLOGIC IC	NJW1102FG1
	IC1102	DIGITAL DELAY IC	NJU9702D
	Q102	TRANSISTOR	2SA1529
	Q103	TRANSISTOR	2SC2668
	Q104	TRANSISTOR	2SA854S
	Q131	N-FET	2SK246
	Q132	TRANSISTOR	2SC1740SLN
	Q151, Q191	TRANSISTOR	2SA933S
	Q192	TRANSISTOR	2SA933S
	Q401	TRANSISTOR	DTC143ES
	Q403	TRANSISTOR	2SC1740S
	Q405	TRANSISTOR	DTC124ES
	Q406	TRANSISTOR	2SC1740S
	Q407	TRANSISTOR	DTC143ES
	Q409	TRANSISTOR	2SA965
	Q410	TRANSISTOR	2SC2235
	D401, D402	DIODE	D5SBA20(B)
	D403-D406	DIODE	S5688G
	D407	ZENER DIODE	MTZJ24B
	D408	ZENER DIODE	MTZJ6.8A
	D409-D411	DIODE	1SS252
	D412, D413	ZENER DIODE	MTZJ5.6C
	D414	DIODE	S5688G
	D415	ZINER DIODE	MTZJ5.1A
	D416, D417	DIODE	1SS252
	D420	ZINER DIODE	MTZJ5.6A
	D421, D422	DIODE	1SS252
SWITCHES AND RELAYS			
	RY401, RY402	RELAY	ASR7001
	RY403	RELAY	ASR7009
	RY404	RELAY	ASR1044
COILS AND FILTERS			
	F101	CERAMIC FILTER	ATF-119
	F102	CERAMIC FILTER	ATF-107
	F151	CERAMIC FILTER	ATF-208
	L131	AXIAL INDUCTOR	LAU2R2J
	L151	COIL	ATE7001
	L153	AXIAL INDUCTOR	LAU220J
CAPACITORS			
	C101	CERAMIC CAPACITOR	CGCYX103M16
	C102, C103	CERAMIC CAPACITOR	CGCYX473M16
	C104	CERAMIC CAPACITOR	CGCYX103M16
	C106, C108	CERAMIC CAPACITOR	CKPUYY103M16
	C109	AXIAL CERAMIC C.	CCPUCH100J50
	C110, C111	CERAMIC CAPACITOR	CGCYX473M16
	C113	CERAMIC CAPACITOR	CKPUYY103M16
	C115, C116	CERAMIC CAPACITOR	CGCYX103M16
	C119	CERAMIC CAPACITOR	CGCYX103M16
	C131, C132	AXIAL CERAMIC C.	CCPUCH150J50
	C133	ELECT. CAPACITOR	CEAS470M25
	C134	CERAMIC CAPACITOR	CKPUYY103M16
	C135	ELECT. CAPACITOR	CEAS470M25
	C136	AUDIO FILM CAPACITOR	CFTXA224J50
	C137	CERAMIC CAPACITOR	CGCYX103M16
	C139, C151	CERAMIC CAPACITOR	CGCYX473M16
	C152	CERAMIC CAPACITOR	CGCYX473M16
	C153	ELECT. CAPACITOR	CEAS470M25
	C154	ELECT. CAPACITOR	CEAS100M50
	C155	CERAMIC CAPACITOR	CGCYX473M16
	C156	ELECT CAPACITOR	CEAS100M50
	C157	CERAMIC CAPACITOR	CKPUYB102K50
	C158	CERAMIC CAPACITOR	CGCYX183M25
	C159	ELECT. CAPACITOR	CEAS4R7M50
	C162, C163	ELECT. CAPACITOR	CEAS010M50
	C164	ELECT. CAPACITOR	CEASR33M50
	C165, C166	AUDIO FILM CAPACITOR	CFTXA153J50
	C171	ELECT. CAPACITOR	CEAS100M50
	C172	CERAMIC CAPACITOR	CKPUYB102K50
	C173	ELECT. CAPACITOR	CEAS4R7M50
	C174, C175	CERAMIC CAPACITOR	CKPUYY103M16
	C185	CERAMIC CAPACITOR	CCCSL470J50
	C191, C192	ELECT. CAPACITOR	CEAS4R7M50
	C193	CERAMIC CAPACITOR	CGCYX103M16
	C194	ELECT. CAPACITOR	CEAS220M25
	C207, C208	ELECT. CAPACITOR	CEAS101M25
	C209, C210	PLASTIC FILM CAPACITOR	CQMA822J50
	C211, C212	PLASTIC FILM CAPACITOR	CQMA242J50
	C215, C216	CERAMIC CAPACITOR	CKCYF103Z50
	C217, C218	ELECT. CAPACITOR	CEAS2R2M50
	C221, C222	ELECT. CAPACITOR	CEAS2R2M50
	C223, C224	CERAMIC CAPACITOR	CKCYF103Z50

Mark	No.	Description	Part No.
	C225, C226	ELECT. CAPACITOR	CEAS4R7M50
	C227	CERAMIC CAPACITOR	CKPUYB102K50
	C231, C232	ELECT. CAPACITOR	CEAS100M50
	C401, C402	ELECTROLYTIC CAPACIT (8200μF/71V)	ACH7018
	C403	ELECT. CAPACITOR	CEAS102M35
	C404	ELECT. CAPACITOR	CEAS471M35
	C405	ELECT. CAPACITOR	CEAS101M50
	C406	ELECT. CAPACITOR	CEAS101M25
	C407, C408	ELECT. CAPACITOR	CEAS470M25
	C409	CERAMIC CAPACITOR	CKCYF103Z50
	C410	ELECT. CAPACITOR	CEAS471M25
	C411	ELECT. CAPACITOR	CEAS470M25
	C412, C413	CKA (0.01μF/AC250V)	ACG1005
	C414	CKA (10000PF/AC250V)	ACG7020
	C415	CKA (0.022μF/AC400V)	ACG1030
	C1010, C1011	ELECT. CAPACITOR	CEAS101M25
	C1012	CERAMIC CAPACITOR	CGCYX104M16
	C1101, C1102	ELECT. CAPACITOR	CEAS100M50
	C1103	ELECT. CAPACITOR	CEANL220M25
	C1104	ELECT. CAPACITOR	CEAS470M25
	C1105	PLASTIC FILM CAPACITOR	CQMA472J50
	C1106	ELECT. CAPACITOR	CEAS220M25
	C1107	PLASTIC FILM CAPACITOR	CQMA681J50
	C1108, C1109	AUDIO FILM CAPACITOR	CFTXA104J50
	C1110	PLASTIC FILM CAPACITOR	CQMA681J50
	C1111, C1112	AUDIO FILM CAPACITOR	CFTXA104J50
	C1113, C1114	AUDIO FILM CAPACITOR	CFTXA473J50
	C1115	AUDIO FILM CAPACITOR	CFTXA223J50
	C1116-C1119	AUDIO FILM CAPACITOR	CFTXA104J50
	C1120	AUDIO FILM CAPACITOR	CFTXA223J50
	C1121	AUDIO FILM CAPACITOR	CFTXA224J50
	C1122	ELECT. CAPACITOR	CEAS4R7M50
	C1123, C1124	AUDIO FILM CAPACITOR	CFTXA224J50
	C1125	ELECT. CAPACITOR	CEAS4R7M50
	C1126	AUDIO FILM CAPACITOR	CFTXA224J50
	C1129	ELECT. CAPACITOR	CEAS100M50
	C1130	PLASTIC FILM CAPACITOR	CQMA561J50
	C1131	PLASTIC FILM CAPACITOR	CQMA102J50
	C1132	ELECT. CAPACITOR	CEAS101M25
	C1133	PLASTIC FILM CAPACITOR	CQMA562J50
	C1134	AUDIO FILM CAPACITOR	CFTXA473J50
	C1135	AUDIO FILM CAPACITOR	CFTXA684J50
	C1136	AUDIO FILM CAPACITOR	CFTXA104J50
	C1137, C1138	ELECT. CAPACITOR	CEAS4R7M50
	C1139	ELECT. CAPACITOR	CEAS221M10
	C1152	CERAMIC CAPACITOR	CGCYX104M16
	C1153	ELECT. CAPACITOR	CEAS4R7M50
	C1155	PLASTIC FILM CAPACITOR	CQMA561J50
	C1156	PLASTIC FILM CAPACITOR	CQMA562J50
	C1157	AUDIO FILM CAPACITOR	CFTXA683J50
	C1158, C1159	AUDIO FILM CAPACITOR	CFTXA104J50
	C1160	ELECT. CAPACITOR	CEAS470M25
	C1161	AUDIO FILM CAPACITOR	CFTXA683J50
	C1162	PLASTIC FILM CAPACITOR	CQMA561J50
	C1163	PLASTIC FILM CAPACITOR	CQMA222J50
	C1179	CERAMIC CAPACITOR	CKPUYB102K50
	C1180	CERAMIC CAPACITOR	CKPUYB151K50
RESISTORS			
	VR151	VR (10kΩ, 0.1W)	ACP1043
	R404	METAL OXIDE RESISTOR	RS3LMF272J
	R409	METAL OXIDE RESISTOR	RS2LMF121J
	R412	CARBON FILM RESISTOR	RD1/2PM270J
	R418	RESISTOR(2.2MΩ, 1/2W)	ACN-208
	R422	METAL OXIDE RESISTOR	RS3LMF272J
	R1111	METALFILM RESISTOR	RN1/6PQ1003F
		Other Resistors	RD1/4PU□□□J
OTHERS			
	101	AM RF TUNING BLOCK	AXX7025
	104	EARTH METAL FIT	VNF-091
	201	PIN JACK(6P)	AKB7013
	203	PIN JACK(4P)	AKB7014
	402	CABLE HOLDER (6P)	AKT1079
	403	EARTH METAL FIT	VNF-091
	404	CABLE HOLDER (3P)	AKT1076
	406	CABLE HOLDER (9P)	AKT1082
	407	CABLE HOLDER (8P)	AKT1081
	408	CABLE HOLDER (6P)	AKT1079
	451	AC SOCKET 1-P	AKP1060
	BN101	TERMINAL 4-P	AKA1016
	CN202	PIN JACK(4P)	AKB7015
	CN410	CONNECTOR(14P)	KPE14
	CN411	CONNECTOR(15P)	KPE15
	CN413	CONNECTOR(8P)	KPE8
	CN414	CONNECTOR(9P)	KPE9
	CN432	PIN JACK 1-P	AKB7042
	CN434	SPEAKER TERMINAL 6-P	AKE7005
	JA431	JACK/12V	PKN1004
⚠	T401	POWER TRANSFORMER	ATT1223
	X1101	CERAMIC RESONATOR (2.00MHz)	ASS7011
	X131	CRYSTAL RESONATOR (7.200MHz)	ASS1042
	X151	CRYSTAL RESONATOR (456kHz)	ASS1066

FM/AM TUNER MODULE

No service part.

FL AND UCOM ASSY

SEMICONDUCTORS

IC501	OP-AMP IC	NJM4558D-D
IC826	CONTROL MCU	PDG172A
Q501, Q502	TRANSISTOR	2SC1740S
Q826	TRANSISTOR	DTC143ES
Q827	TRANSISTOR	DTA124ES
Q828, Q829	TRANSISTOR	DAT143ES
Q830	TRANSISTOR	DTC143ES
D827-D831	DIODE	1SS252
D836-D839	DIODE	1SS252
D841, D842	DIODE	1SS252

Mark	No.	Description	Part No.
SWITCH AND RELAYS			
	S825-S827	SWITCH	ASG1034
	S829-S832	SWITCH	ASG1034
	S835-S837	SWITCH	ASG1034
	S839-S843	SWITCH	ASG1034
COILS AND FILTERS			
	L826	AXIAL INDUCTOR	LAU2R2J
CAPACITORS			
	C501, C502	CERAMIC CAPACITOR	CKCYF103Z50
	C503, C504	CERAMIC CAPACITOR	CKPUYB151K50
	C505, C506	ELECT. CAPACITOR	CEAS100M50
	C507, C508	AUDIO FILM CAPACITOR	CFTXA153J50
	C509, C510	ELECT. CAPACITOR	CEASR47M50
	C511, C512	ELECT. CAPACITOR	CEAS0R1M50
	C826	CERAMIC CAPACITOR	CKPUYY103M16
	C827	ELECT. CAPACITOR	CEAS221M10
	C828	CAPACITOR	ACH7013
	C829	CERAMIC CAPACITOR	CKPYF103Z50
	C830	CERAMIC CAPACITOR	CKPUYY103M16
	C831	ELECT. CAPACITOR	CEAS2R2M50
	C832	CERAMIC CAPACITOR	CGCYX104M16
	C833	CERAMIC CAPACITOR	CKPUYY103M16
	C836, C837	CERAMIC CAPACITOR	CKPUYF473Z16
	C840	ELECT. CAPACITOR	CEAS2R2M50
	C844	CERAMIC CAPACITOR	CKCYF103Z50
	C845	CERAMIC CAPACITOR	CKPUYX222M16
	C846	ELECT. CAPACITOR	CEAS4R7M50
RESISTORS			
	VR501, VR502	VARIABLE RESISTOR (30kΩ-B5x2)	ACS7005
	VR503	VARIABLE(500kΩ-B)	ACS7004
	R858	CARBON FILM RESISTOR	RD1/2PM3R9J
		Other Resistors	RD1/4PU□□□J
OTHERS			
	803	REMOTE RECEIVER UNIT	GP1U58X
	V826	FL TUBE	AAV7026
	X826	CERAMIC RESONATOR (7.70MHz)	ASS1055

ST. IND. ASSY

Mark	No.	Description	Part No.
SEMICONDUCTORS			
	D876	LED	BR3371XJ30A
SWITCHES AND RELAYS			
	S876-S878	SWITCH	ASG1034
RESISTORS			
	R876	CARBON FILM RESISTOR	RD1/4PU331J

VIDEO ASSY

Mark	No.	Description	Part No.
SEMICONDUCTORS			
	IC1501	VIDEO SEITCH	LA7952
	Q1501, Q1502	TRANSISTOR	2SC1740S
CAPACITORS			
	C1501, C1502	ELECT. CAPACITOR	CEAS4R7M50
	C1503, C1504	ELECT. CAPACITOR	CEAS471M6
	C1505	ELECT. CAPACITOR	CEAS101M25
	C1506	CERAMIC CAPACITOR	CGCYX473M16
	C1507	ELECT. CAPACITOR	CEAS101M25
	C1508	CERAMIC CAPACITOR	CGCYX473M16
	C1509, C1510	CERAMIC CAPACITOR	CKCYF103Z50
RESISTORS			
	R1507	CARBON FILM RESISTOR	RD1/2PM271J
		Other Resistors	RD1/4PU□□□J
OTHERS			
	1501, 1502	PIN JACK(2P)	AKB7016
	CN1501	CONNECTOR(4P)	KPE4

REG ASSY

Mark	No.	Description	Part No.
SEMICONDUCTORS			
	IC475	REGULATOR IC	NJM78M56FA
	IC476	REGULATOR IC	NJM78M12FA
	IC477	REGULATOR IC	NJM79M12FA
CAPACITORS			
	C475	CERAMIC CAPACITOR	CKCYF103Z50
	C476	ELECT. CAPACITOR	CEAS470M25
	C477	CERAMIC CAPACITOR	CKCYF103Z50
	C478	ELECT. CAPACITOR	CEAS101M25
	C479	CERAMIC CAPACITOR	CKCYF103Z50
	C480	ELECT. CAPACITOR	CEAS101M25
RESISTORS			
	R476, R477	METAL OXIDE RESISTOR	RS2LMF391J
OTHERS			
	475	CABLE HOLDER (9P)	AKT1082

SP. SW AND H.P ASSY

Mark	No.	Description	Part No.
SWITCHES AND RELAYS			
	S701	PUSH SWITCH	ASG1017
	S702	PUSH SWITCH	ASG1026
RESISTORS			
	R701, R702	METAL OXIDE RESISTOR	RS2LMF331J
OTHERS			
	701	EARTH METAL FIT	VNF-091
	CN701	JACK	AKN7001

TRANS ASSY

Mark	No.	Description	Part No.
OTHERS			
	952	CABLE HOLDER (6P)	AKT1079

PRIMARY ASSY

No service part.

BINDING ASSY

No service part.

AMP ASSY

Mark	No.	Description	Part No.
SEMICONDUCTORS			
	Q301-Q304	TRANSISTOR	2SA992
	Q305, Q306	TRANSISTOR	2SA1145

Mark	No.	Description	Part No.
	Q307, Q308	TRANSISTOR	2SC2705
⚠	Q309, Q310	TRANSISTOR	2SC1740S
⚠	Q311, Q312	TRANSISTOR	2SC4793
⚠	Q313, Q314	TRANSISTOR	2SA1837
	Q315, Q316	TRANSISTOR	2SC2240
	Q317, Q318	TRANSISTOR	2SC1740S
	Q321, Q322	TRANSISTOR	2SA970
	Q1301-Q1304	TRANSISTOR	2SA992
	Q1305, Q1306	TRANSISTOR	2SA1145
	Q1307, Q1308	TRANSISTOR	2SC2705
⚠	Q1309, Q1310	TRANSISTOR	2SC1740S
⚠	Q1311, Q1312	TRANSISTOR	2SC4793
⚠	Q1313, Q1314	TRANSISTOR	2SA1837
	Q1315, Q1316	TRANSISTOR	2SC2240
	Q1321, Q1322	TRANSISTOR	2SA970
	D301-D304	DIODE	1SS252
	D313-D316	DIODE	1SS252
	D1301-D1304	DIODE	1SS252
	D1313-D1316	DIODE	1SS252
COILS AND FILTERS			
	L301, L302	COIL (0.7μH)	ATH1004
	L1301, L1302	COIL (0.7μH)	ATH1004
CAPACITORS			
	C301, C302	ELECT. CAPACITOR	CEAS2R2M50
	C303, C304	CERAMIC CAPACITOR	CCCSL331J50
	C305, C306	CERAMIC CAPACITOR	CCCSL681J50
	C307, C308	CERAMIC CAPACITOR	CCCSL120K500
	C313, C314	ELECT. CAPACITOR	CEAS101M25
	C317, C318	CERAMIC CAPACITOR	CCCSL050C500
	C319-C322	CERAMIC CAPACITOR	CCCSL101K500
	C323, C324	ELECT. CAPACITOR	CEANP2R2M50
	C327, C328	AUDIO FILM CAPACITOR	CFTXA473J50
	C329	ELECT. CAPACITOR	CEAS221M10
	C1301, C1302	ELECT. CAPACITOR	CEAS2R2M50
	C1303, C1304	CERAMIC CAPACITOR	CCCSL331J50
	C1305, C1306	CERAMIC CAPACITOR	CCCSL681J50
	C1307, C1308	CERAMIC CAPACITOR	CCCSL120K500
	C1313, C1314	ELECT. CAPACITOR	CEAS101M25
	C1317, C1318	CERAMIC CAPACITOR	CCCSL050C500
	C1319-C1322	CERAMIC CAPACITOR	CCCSL101K500
	C1323, C1324	ELECT. CAPACITOR	CEANP2R2M50
	C1327, C1328	AUDIO FILM CAPACITOR	CFTXA473J50
RESISTORS			
	R311, R312	CARBON FILM RESISTOR	RD1/4PM681J
	R313, R314	CARBON FILM RESISTOR	RD1/4PM104J
⚠	R317, R318	CARBON FILM RESISTOR	RD1/4PMF680J
⚠	R319, R320	FUSLIBLE RESISTOR	RF1/4PS101J
⚠	R325-R332	CARBON FILM RESISTOR	RD1/4PMF101J
⚠	R333-R340	FUSLIBLE RESISTOR	RF1/4PS4R7J
⚠	R341, R342	RESISTOR (0.33Ω, 5W)	ACN7001
⚠	R343, R344	CARBON FILM RESISTOR	RD1/4PMF472J
⚠	R351, R352	CARBON FILM RESISTOR	RD1/4PMF100J
	R353, R354	METAL OXIDE RESISTOR	RS1LMF100J
	R1311, R1312	CARBON FILM RESISTOR	RD1/4PM681J
⚠	R1317, R1318	CARBON FILM RESISTOR	RD1/4PMF680J
⚠	R1319, R1320	FUSLIBLE RESISTOR	RF1/4PS101J
⚠	R1325-R1332	CARBON FILM RESISTOR	RD1/4PMF101J
⚠	R1333-R1340	FUSLIBLE RESISTOR	RF1/4PS4R7J
⚠	R1341, R1342	RESISTOR (0.33Ω, 5W)	ACN7001
⚠	R1343, R1344	CARBON FILM RESISTOR	RD1/4PMF472J
⚠	R1351, R1352	CARBON FILM RESISTOR	RD1/4PMF100J
	R1353, R1354	METAL OXIDE RESISTOR	RS1LMF100J
		Other Resistors	RD1/4PU□□□J
OTHERS			
	CN301	CONNECTOR(7P)	KPE7

VOL. ASSY

SEMICONDUCTORS			
	IC601	OP-AMP IC	NJM4558D-D
	IC602	IC	UPC4570C
	Q631, Q632	TRANSISTOR	2SC2878
	Q641, Q642	TRANSISTOR	2SC2878
	Q661, Q662	TRANSISTOR	2SC2878
	Q681, Q682	TRANSISTOR	2SA1115
	Q683, Q684	TRANSISTOR	2SC2603
CAPACITORS			
	C631, C632	AUDIO FILM CAPACITOR	CFTXA153J50
	C633, C634	AUDIO FILM CAPACITOR	CFTXA823J50
	C641, C642	ELECT. CAPACITOR	CEAS2R2M50
	C645, C646	CERAMIC CAPACITOR	CGCYX104M16
	C661, C662	ELECT. CAPACITOR	CEAS4R7M50
	C663, C664	ELECT. CAPACITOR	CEAS2R2M50
	C665, C666	CERAMIC CAPACITOR	CCCSL681J50
	C667, C668	CERAMIC CAPACITOR	CKCYB102K50
	C681	ELECT. CAPACITOR	CEANP100M16
	C682	ELECT. CAPACITOR	CEAS220M50
RESISTORS			
	VR601	VARIABLE RESISTOR (100kΩ-A5x4)	ACX7005
		Other Resistors	RD1/4PU□□□J
OTHERS			
	601	CABLE HOLDER	AKT1023
	CN603	CONNECTOR(4P)	KPE4

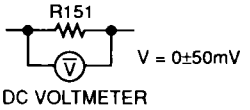
FRONT SP. ASSY

OTHERS			
	901	CABLE HOLDER (8P)	AKT1081
	902	CABLE HOLDER (3P)	AKT1076
	CN901	SPEAKER TERMINAL 8-P	AKE7006

6. ADJUSTMENTS

ADJUSTMENT OF FM TUNER SECTION

- Set the FM/AM selector to FM BAND.
- Connect the wiring as shown in Fig. 1–1.

Step No.	Adjustment Title	FM SG (1kHz, ±75kHz dev.)		Reception Frequency Display	Adjustment Location	Specifications
		Frequency (MHz)	Level (dBμV)			
1	Center Adjustment	98	60	98.0 MHz	L151	Adjust so that the DC voltage of R151's both ends becomes 0V±50mV. 
2	Front-end Sensitivity Check	98	Less than 10	98.0 MHz	—	Less than 10 dBμV.
3	Stereo Distortion Check	89	60	89.0 MHz	T101	Less than 2%. Check that it becomes within the standard by turning the IFT T101 in the FM/AM TUNER FE MODULE less than ±90° in case out of standard.
4	Stereo Separation Check	89	60	89.0 MHz	—	Less than 23 dB. In case out of standard, cut the R157.
5	TUNED IND. Lighting Level	98	18 (±3 dB)	98.0 MHz	VR151	18 dBμV±3 dB. Adjust so that the indicator of TUNED IND. starts to light up.

Note:

- *Make indicator adjustments in order of AM → FM.*

ADJUSTMENT OF MW TUNER SECTION

- Set the FM/AM selector to AM (MW) BAND.
- Connect the wiring as shown in Fig. 1–1.

Step No.	Adjustment Title	AM SG (400Hz, 30% Mod.)		Reception Frequency Display	Adjustment Location	Specifications
		Frequency (kHz)	Level (dBμV/m)			
1	TUNED IND. Lighting Level Check	999*1	Less than 65	999 kHz*1	—	Less than 65 dBμV/m. In case out of standard, cut the R164.

**1: For the area using 10 kHz step, frequencies should be 1000 kHz.*

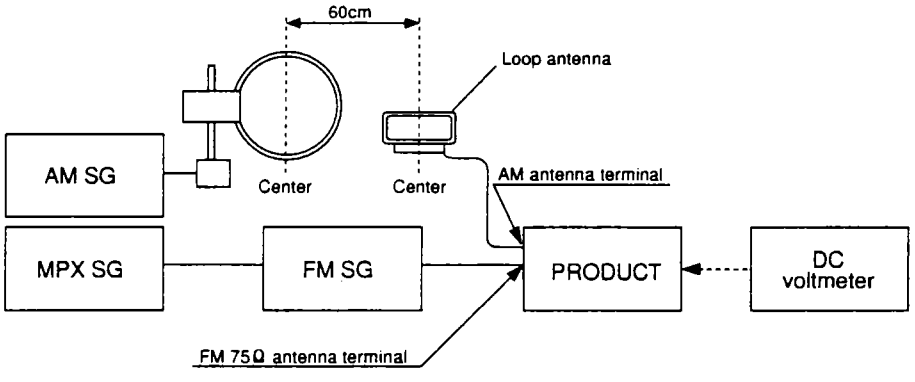


Fig. 1–1. AM and FM Adjustment Wiring Diagram

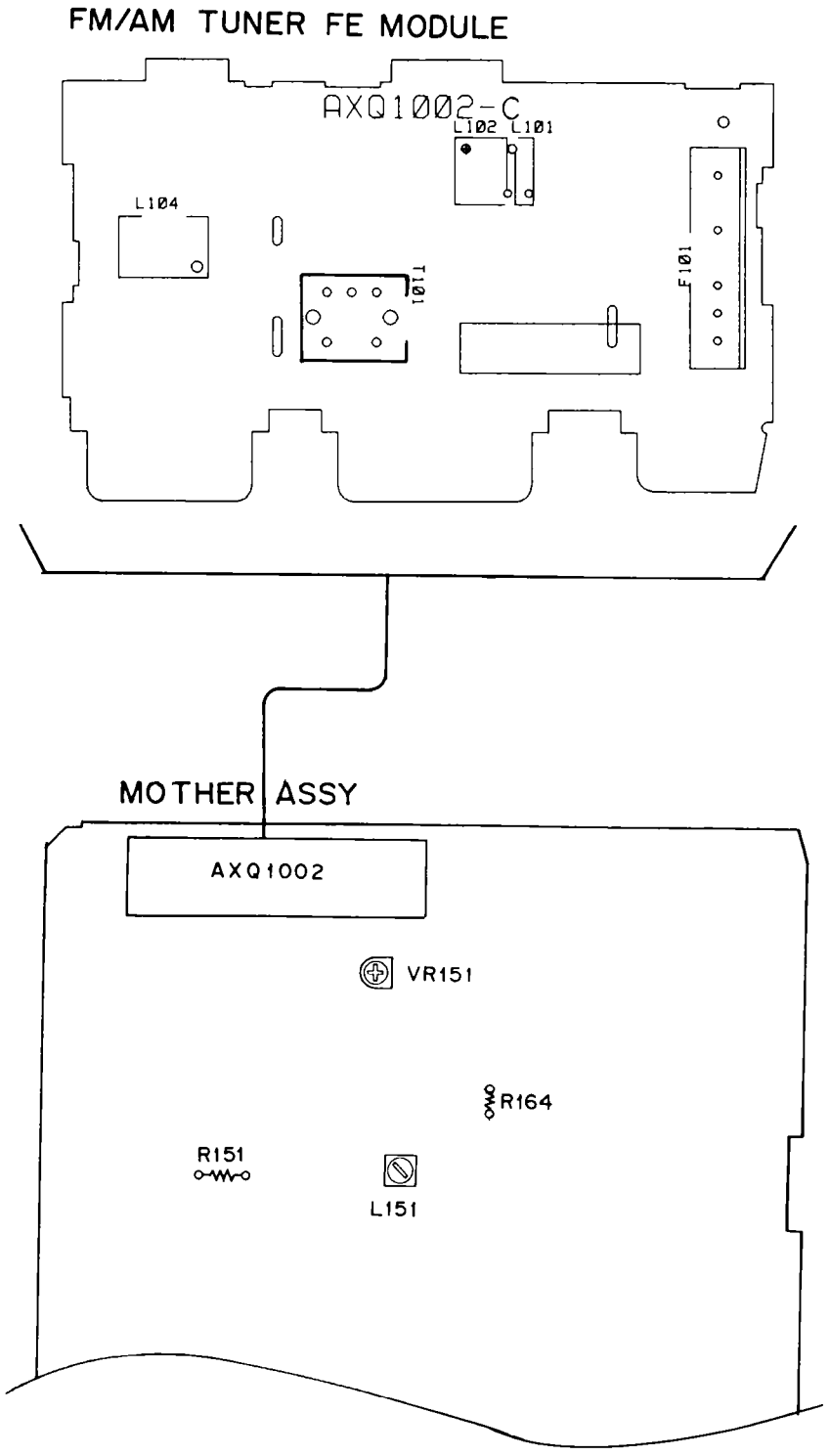


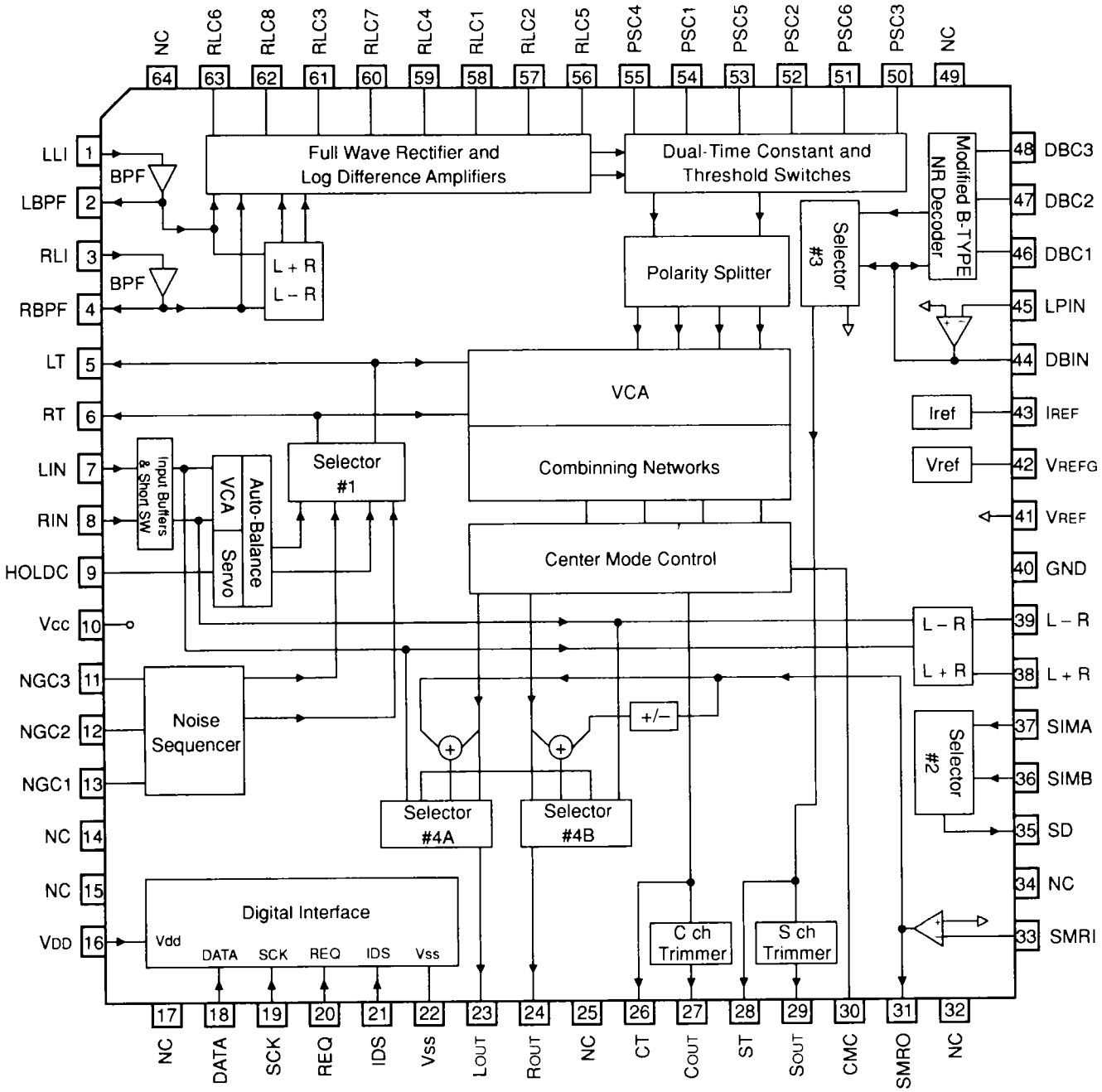
Fig. 1-2. Adjustment Points

7. IC INFORMATION

• The information shown in the list is basic information and may not correspond exactly to that shown in the schematic diagrams.

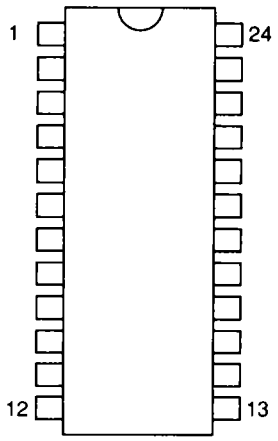
■ NJW1102FG1 (MOTHER ASSY: IC1101)
DOLBY PROLOGIC IC

● Block Diagram

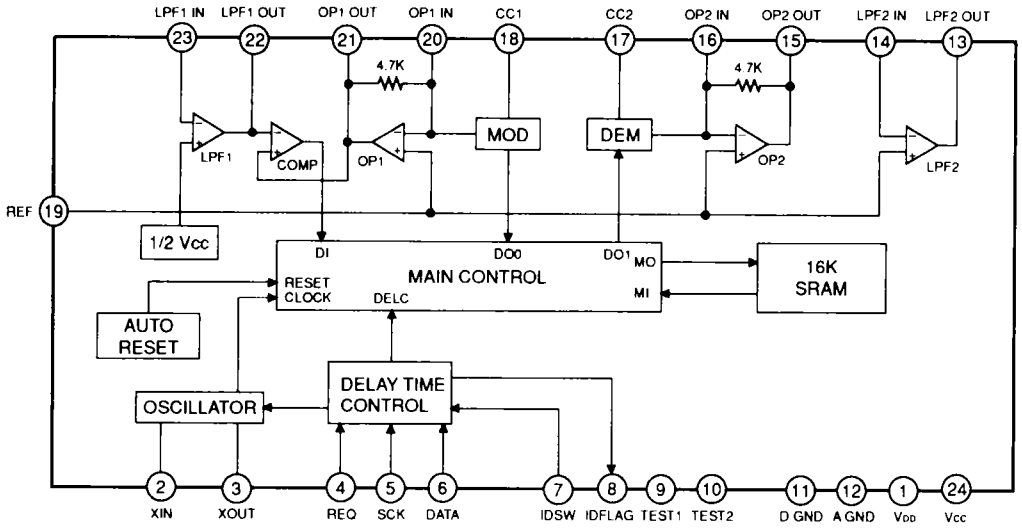


■ NJU9702D (MOTHER ASSY: IC1102)
DIGITAL DELAY IC

● Pin Arrangement (Top View)



● Block Diagram

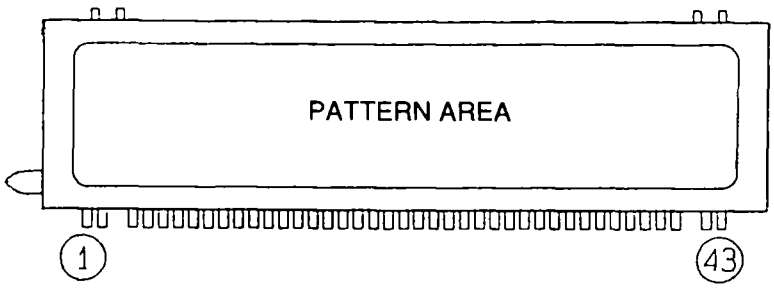


● Pin Function

Pin No.	Abbveviation	Pin Name	I/O	Function
1	VDD	Digital power supply	–	
2	XIN	Oscillator input	I	Connected to a 2 MHz ceramic oscillator.
3	XOUT	Oscillator output	O	Input to Pin ② when the external clock is used.
4	REQ	Request	I	Data request input
5	SCK	Shift clock	I	Serial data shift clock input
6	DATA	Data	I	Serial data input
7	IDSW	ID switch	I	External input pin for the 4th bit of ID code
8	IDFLAG	ID flag	O	Outputs a data input identification pulse and serial data.
9	TEST1	Test 1	–	L = Normal mode
10	TEST2	Test 2	–	L = Normal mode
11	D GND	Digital GND	–	
12	A GND	Analog GND	–	
13	LPF2 OUT	Low-pass filter 2 output	O	Forms the output side low-pass filter with external CR.
14	LPF2 IN	Low-pass filter 2 input	I	
15	OP2 OUT	Operation amplifier 2 output	O	Forms the demodulation integrator with external CR.
16	OP2 IN	Operation amplifier 2 input	I	
17	CC2	Current control 2	–	Demodulator ADM control
18	CC1	Current control 1	–	Modulator ADM control
19	REF	Reference	–	Analog reference voltage = 1/2 Vcc
20	OP1 IN	Operation amplifier 1 input	I	Forms the modulation integrator with external CR.
21	OP1 OUT	Operation amplifier 1 output	O	
22	LPF1 OUT	Low-pass filter 1 output	O	Forms the input side low-pass filter with external CR.
23	LPF1 IN	Low-pass filter 1 input	I	
24	Vcc	Analog power supply	–	

8. FL INFORMATION

■ AAV7026 (FL AND UCOM ASSY: V826)



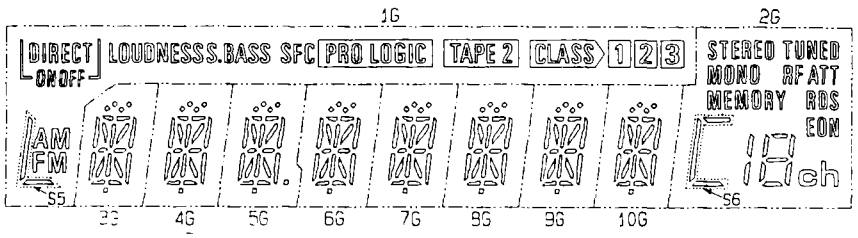
● Pin Assignment

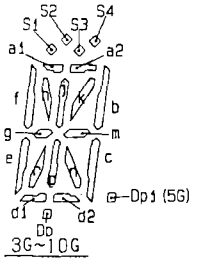
Pin No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
Assignment	F1	F1	NP	G1	G2	G3	G4	G5	G6	G7	G8	G9	G10	NL	NL	NL	NL	NL	NL	S21	S16	S17

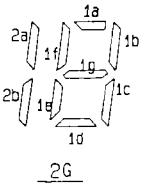
Pin No.	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43
Assignment	S15	S13	S12	S14	S11	S10	S9	S8	S7	S6	S5	S3	S4	S2	S1	S18	S19	S20	NP	F2	NL

F1, F2:Filament G1~G10:Grid S1~S21:Anode NL:No Lead NP:No Pin

● Grid Assignment







● Anode Assignment

	1G	2G	3G, 4G, 6G~10G	5G
S1	S5	S6	a1	a1
S2	FM	2a, 2b	a2	a2
S3	AM	1a	h	h
S4	[DIRECT]	1b	j	j
S5	ON	1c	k	k
S6	OFF	1d	b	b
S7	[PRO LOGIC]	1e	f	f
S8	SFC	1f	m	m
S9	LOUDNESS	1g	g	g
S10	S. BASS	ch	c	c
S11	[TAPE 2]	STEREO	e	e
S12	[CLASS]	TUNED	r	r
S13	[1]	MONO	p	p
S14	[2]	RF ATT	n	n
S15	[3]	MEMORY	d1	d1
S16		RDS	d2	d2
S17		EON	Dp	Dp
S18			S1, S3	S1, S3
S19			S4	S4
S20			S2	S2
S21				Dp1

9. DISASSEMBLY

CAUTION !

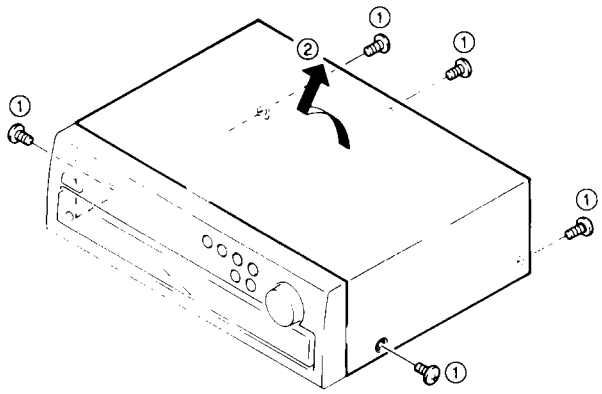
You will get an electric shock if you touch the Radiator (Heat-sink) when the power cord is connected to the power source. Also, the Electrolytic Capacitor contains a charge even when the power cord is unplugged, so the charge must be removed when the bonnet has been taken off.

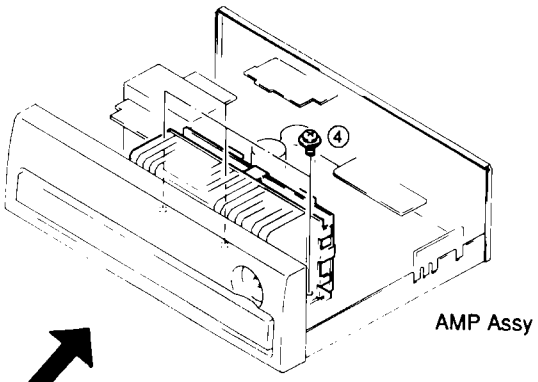
< Removeing the Charge >

① Connect the Radiator (top side) and either the Chassis or the Rear panel for 2 to 3 seconds with a Resistor of more than 5W/10Ω.

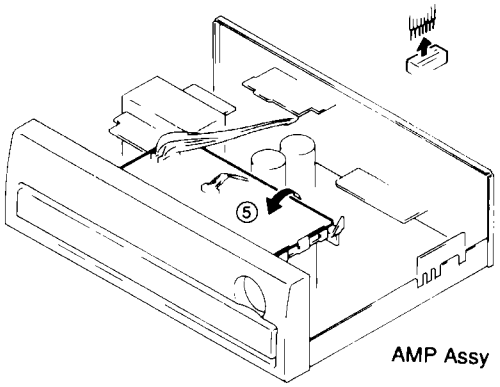
② Connect the +B lead on the J2 and either the Chassis or the Rear panel for 2 to 3 seconds with a Resistor of more than 5W/10Ω.

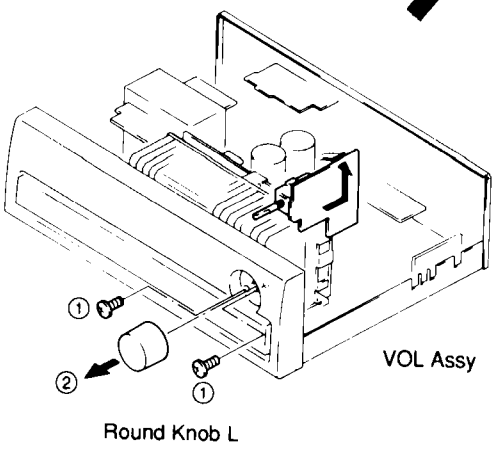
■ BONNET

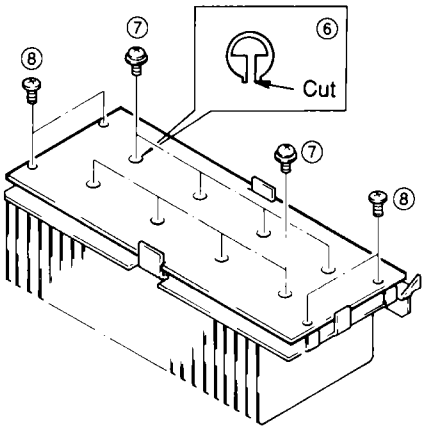




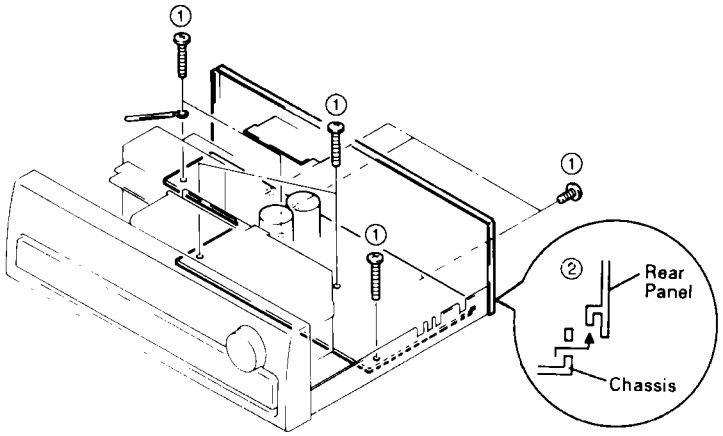
■ AMP ASSY

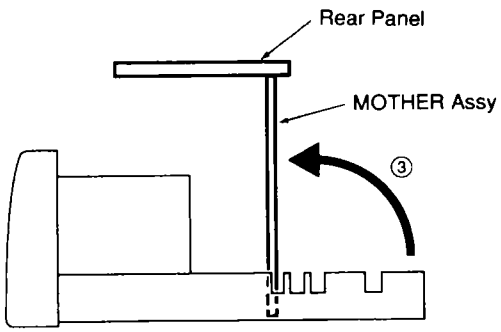




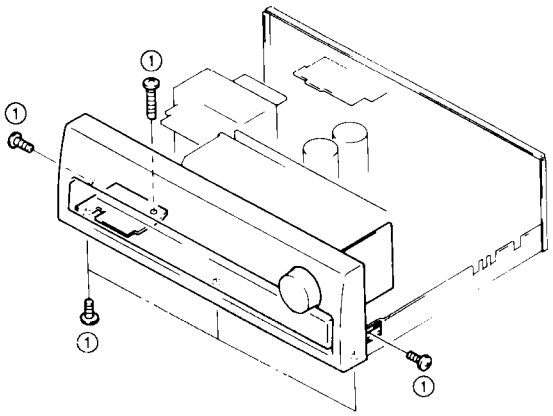


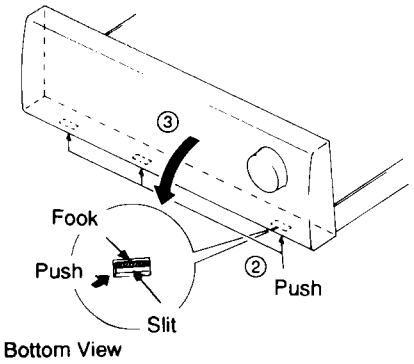
■ MOTHER ASSY

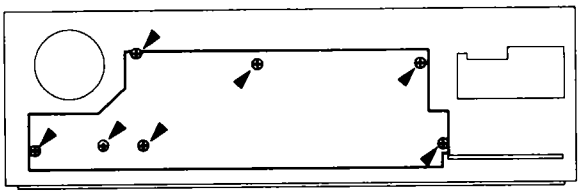




■ FL AND UCOM ASSY





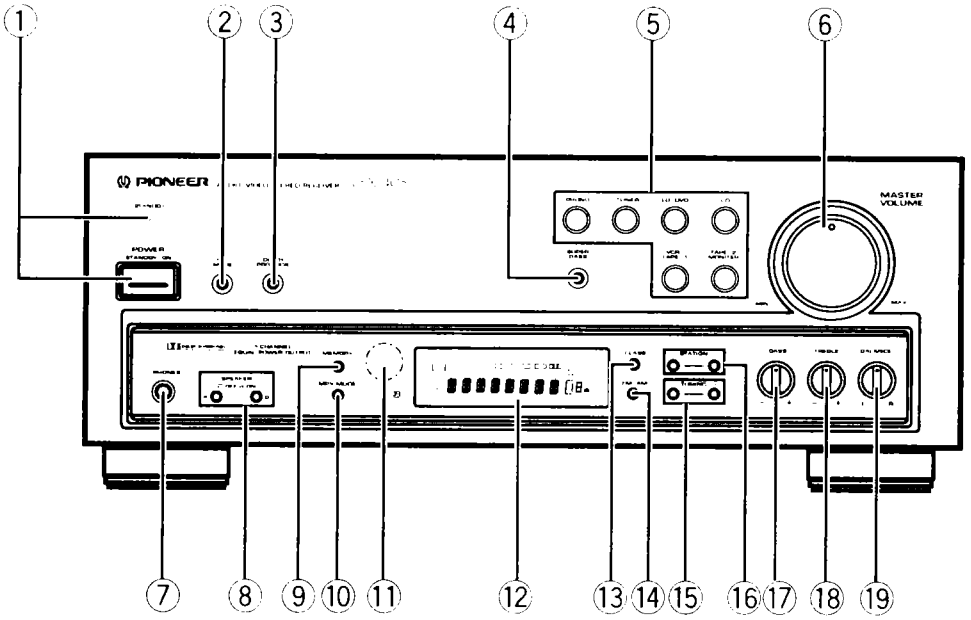


Front Panel Section

10. PANEL FACILITIES

FRONT PANEL FACILITIES

- Illustration shows model VSX-405.



1 POWER STANDBY/ON switch STANDBY indicator

This is the switch for electric power.

ON : When set to the ON position, power is supplied and the unit becomes operational.

STANDBY : When set to STANDBY position, the main power flow is cut and the unit is no longer fully operational. A minute flow of power feeds the unit to maintain operation readiness.

The STANDBY indicator lights when the power is set to STANDBY, and goes out when set to ON.

(Timer ON/OFF possible)

When the unit is switched ON, ON/OFF control can be performed by means of the optional timer.

NOTE:

When the power is initially turned ON, muting will be applied to prevent sound from being output for about 5 seconds.

2 SFC MODE button (Not available on the VSX-295 model)

STUDIO → SIMULATED SURROUND → off

RETURN button (VSX-295 only)

Press this button to return the receiver into the initial state. TUNER is selected at this initial state. Adjust the sound level by using the MASTER VOLUME control.

TAPE 2 MONITOR	OFF	MUTING	OFF
SUPER BASS	OFF	FUNCTION	TUNER (FM)

NOTE:

Press the RETURN button, and the last FM station selected is received. If reception of a station is not possible with that frequency, the mode automatically switches to AUTO TUNING.

3 DOLBY PRO LOGIC button

Switches DOLBY PRO LOGIC SURROUND on and off.

4 SUPER BASS button

Press this button when you want to boost the bass.

5 Input selector buttons

PHONO : Press when playing records on a turntable.

TUNER : Press when listening to radio broadcasts.

LD/DVD : Press when performing playback on an LD player or DVD player.

CD : Press when playing compact discs on a CD player.

VCR/TAPE 1 : Press when performing playback on a VCR unit or cassette deck.

TAPE 2 MONITOR : Press when performing playback on a second cassette deck and when monitoring recording.

6 MASTER VOLUME control

Use it to simultaneously adjust the sound volume from the front, center, and rear speakers.

7 PHONES jack

Connect the plug on your headphones to this jack. Set SPEAKERS A and B switches to OFF if you want to cut the sound from the speakers and listen to it only through the headphones.

8 SPEAKERS buttons (A,B)
ON/OFF switches for the A and B speaker systems.

9 MEMORY button
Press this button to switch to the frequency preset mode.

10 MPX MODE buttons
Use to select the auto stereo mode or monaural mode when listening to FM broadcasts. The monaural mode has been selected when the MONO indicator in the display section is lit.

Auto stereo mode:
Normally, leave in this mode for reception. When a stereo FM broadcast is received, it will be automatically reproduced in stereo.

Monaural mode:
When receiving distant stations or stations with weak broadcast signals, the input signal may be weak, thus resulting in increased noise during FM stereo broadcasts. In this event, setting the receiver to the monaural mode will reduce the noise. In this case, however, FM stereo broadcasts will be reproduced in monaural sound.

NOTE:
This button has no effect on reception of AM broadcasts.

11 Remote sensor

12 Display section

13 CLASS button
Use to switch between preset memory classes 1 to 3. In each class, one station can be memorized in each of the 1 to 10 stations, enabling a total of 30 stations to be memorized.

14 FM/AM button
Use this to switch between FM and AM frequency band reception.

15 TUNING buttons
+: Performs tuning from the currently displayed station frequency in ascending frequency order.
–: Performs tuning in order of descending frequencies.

Auto tuning (FM only):
Press TUNING + (up) or – (down) button until the frequency starts to change, then release it. The tuner will automatically search for a broadcasting station and stops when one is found, and the TUNED indicator lights up. To search for another station, press again.

Manual tuning:
Press TUNING + (up) or – (down) button and release quickly. The tuning frequency will change by one step each time the button is pressed. Press as many times as necessary to tune in the desired station. The TUNED indicator lights up when the statin is tuned in best.

- If you keep the TUNING (+/–) button depressed after the frequency has began to change, the reception frequency changes continuously, and stops when the button is released.

NOTE:
When AUTO TUNING is in use, reception may not be possible over long distances or when signals are weak. At these times MANUAL TUNING is recommended.

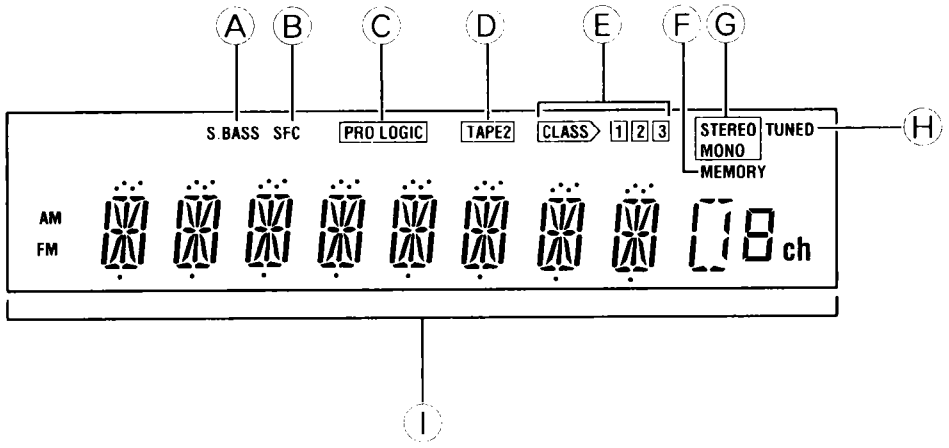
16 STATION (+,–) button
+ : Use to call preset station numbers in ascending order.
- : Use to call preset station numbers in descending order.

17 BASS control
Use to adjust the low-frequency level. Turn clockwise to boost bass and counterclockwise to attenuate bass.

18 TREBLE control
Use to adjust the high-frequency level. Turn clockwise to boost treble and counterclockwise to attenuate treble.

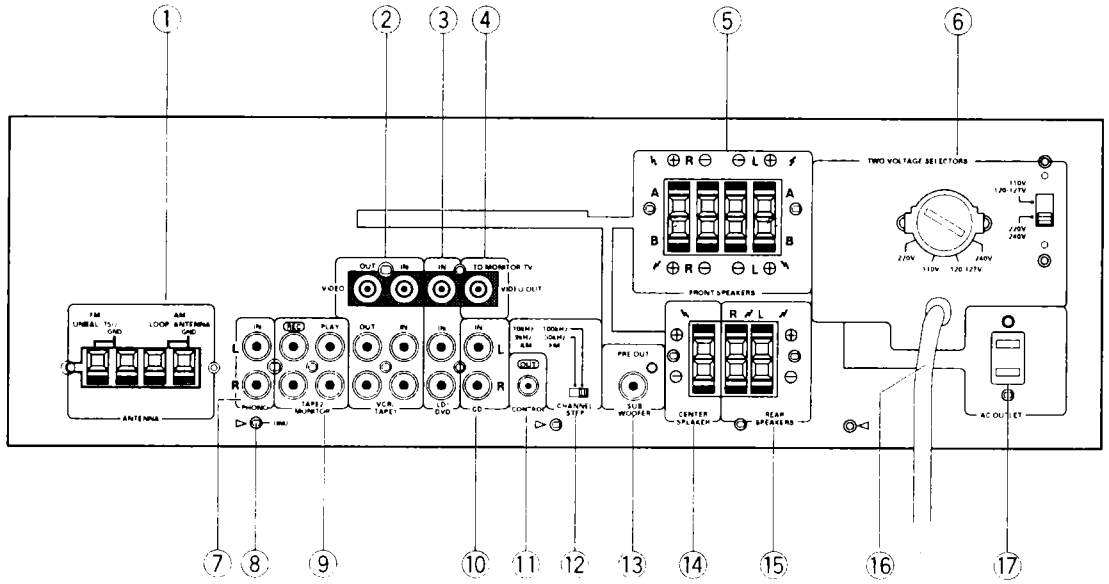
19 BALANCE control
Use to adjust the sound volume balance between left and right speakers.
L : Decrease the sound on the right side.
R : Decrease the sound on the left side.
Usually, left and right volume levels should be the same.

DISPLAY SECTION



REAR PANEL FACILITIES

Illustration shows VSX-405 Multi-voltage model.



1 FM/AM ANTENNA terminals

2 VCR/TAPE 1 jacks
Connect to the first cassette deck or a VCR. With a VCR, also connect the video jacks.

3 LD/DVD input jacks

4 VIDEO OUT (TO MONITOR TV) jack

5 FRONT SPEAKERS terminals
A: Connect to the first set of speakers.
B: Connect to the second set of speakers.
NOTE:
Do not allow any of the cord's conductors to protrude from the terminals or touch any other conductors. Malfunctions or breakdowns may occur when conductors come into contact with each other. Use front speakers with an impedance of 8 Ω to 16 Ω.

6 TWO VOLTAGE SELECTORS switches (Multi-voltage model only)

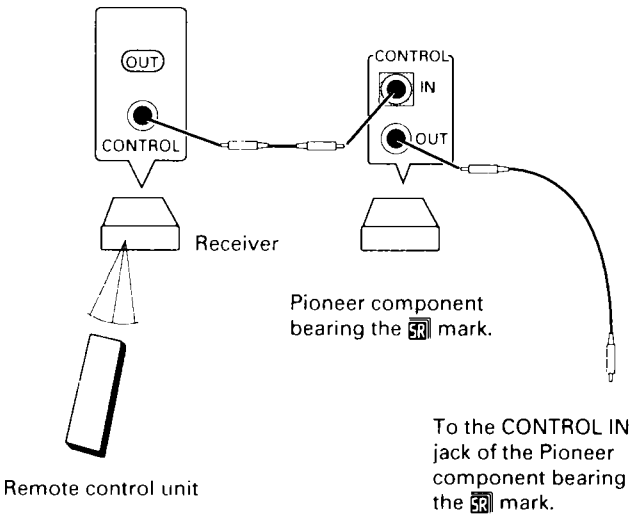
7 PHONO input jacks
Connect to the output cables from a turntable.

8 GND terminal
Connect the turntable ground lead to this terminal.

9 TAPE 2 MONITOR jacks
Connect to audio components such as a second cassette deck or a graphic equalizer.

10 CD input jacks

11 CONTROL OUT jacks
OUT: Connect this jack to other Pioneer components when using the remote control of this unit to control the other components.



12 **CHANNEL STEP switch (Multi- voltage model only)**

13 **SUB WOOFER PRE-OUT jack (Not available on the VSX-305 model)**

If you want to boost the low frequencies, connect to a subwoofer power amplifier.

14 **CENTER SPEAKER terminals**

Connect the center speaker to these terminals.

NOTE:

Do not allow any of the cord's conductors to protrude from the terminals or touch any other conductors. Malfunctioning or breakdowns may occur when conductors come into contact with each other. Use center speakers with impedance of 8 Ω to 16 Ω.

15 **REAR SPEAKERS terminals**

Connect the rear speakers to these terminals.

NOTE:

- *Do not allow any of the cord's conductors to protrude from the terminals or touch any other conductors. Malfunctioning or breakdowns may occur when conductors come into contact with each other. Use rear speakers with impedance of 8 Ω to 16 Ω.*
- *Be sure to connect two speakers (L, R). There will be no sound if only one speaker is connected.*

16 **Power cord**

17 **AC OUTLET**

(U.S. and Canadian models)

[SWITCHED 100 W (0.8 A) MAX]

Power supplied through this outlet is turned on and off by the receiver's POWER switch. Electrical power consumption of connected equipment should not exceed 100 W (0.8 A).

(Multi-voltage model)

[SWITCHED 100 W MAX]

Power supplied through this outlet is turned on and off by the receiver's POWER switch. Total electrical power consumption of connected equipment shold not exceed 100 W.

NOTE:

- *This unit should be disconnected by removing the power plug from the wall socket when not in regular use, e.g. when on vacation.*
- *Do not connect appliances with high power consumption such as heaters, irons, or television sets to this AC OUTLET in order to avoid overheating and fire risk.*
  This can cause the receiver to malfunction.

CAUTION:
DO NOT CONNECT MONITOR OR TV SET.

POWER-CORD CAUTION

Handle the power cord by the plug. Do not pull out the plug by tugging the cord and never touch the power cord when your hands are wet as this could cause a short circuit or electric shock. Do not place the unit, a piece of furniture, etc., on the power cord, or pinch the cord. Never make a knot in the cord or tie it with other cords. The power cords should be routed such that they are not likely to be stepped on. A damaged power cord can cause fire or give you an electrical shock. Check the power cord once in a while. When you find it damaged, ask your nearest PIONEER authorized service center or your dealer for a replacement.

11. SPECIFICATIONS

Amplifier section

<VSX-405>

Continuous average power output of 100 watts* per channel, min., at 8 ohms, from 20 Hz to 20,000 Hz with no more than 0.9 % total harmonic distortion (front).**

[Multi-voltage model only]
Continuous Power Output (DIN)
Front (1kHz, T.H.D. 1%, 8Ω) ..... 115W+115W

<VSX-405>

Continuous Power Output
Front ..... 70 W + 70 W (1 kHz, 0.8 %, 8 Ω)
Center ..... 70 W (1 kHz, 0.8 %, 8 Ω)
Rear ..... 70 W (1 kHz, 0.8 %, 8 Ω)

<VSX-305>

Continuous average power output of 60 watts* per channel, min., at 8 ohms, from 20 Hz to 20,000 Hz with no more than 0.9 % total harmonic distortion (front).**

Continuous Power Output
Front ..... 60 W + 60 W (1 kHz, 0.9 %, 8 Ω)
Center ..... 60 W (1 kHz, 0.9 %, 8 Ω)
Rear ..... 60 W (1 kHz, 0.9 %, 8 Ω)

Dynamic Power (2 Ω/4 Ω/8 Ω)
VSX-405/VSX-295 ..... 170 W/160 W/130 W
VSX-305 ..... 110 W/100 W/70 W

Input (Sensitivity/Impedance)
PHONO MM ..... 2.8 mV/47 kΩ
CD, VCR/TAPE 1, TAPE 2, LD/DVD ..... 200 mV/47 kΩ
Phono Overload Level (T.H.D. 0.1 %, 1 kHz)
PHONO MM ..... 100 mV
Frequency Response
PHONO MM ..... 20 Hz to 20,000 Hz ± 0.3 dB
CD, VCR/TAPE 1, TAPE 2, LD/DVD 5 Hz to 100,000 Hz $^{+3}_{0}$ dB
Output (Level/Impedance)
VCR/TAPE 1 REC, TAPE 2 REC ..... 200 mV/2.2 kΩ
VCR OUT ..... 200 mV/2.2 kΩ
Tone Control
BASS ..... ± 8 dB (150 Hz)
TREBLE ..... ± 8 dB (10 kHz)
SUPER BASS ..... +8 dB (80 Hz)
Signal-to-Noise Ratio (IHF, short circuited, A network)
PHONO MM ..... 72 dB
CD, VCR/TAPE 1, TAPE 2, LD/DVD ..... 96 dB
Signal-to-Noise Ratio [EIA, at 1 W (1 kHz)]
PHONO MM ..... 75 dB
CD, VCR/TAPE 1, TAPE 2, LD/DVD ..... 79 dB

* *Measured pursuant to the Federal Trade Commission's Trade Regulation rule on Power Output Claims for Amplifier.*
** *Measured by Audio Spectrum Analyzer.*

VIDEO Section

Input (Sensitivity/Impedance)
VCR, LD ..... 1 Vp-p/75 Ω
Output (Level/Impedance)
VCR ..... 1 Vp-p/75 Ω
Frequency Response
VCR, LD → MONITOR ..... 5 Hz to 7 MHz $^{+3}_{0}$ dB
Signal-to-Noise Ratio ..... 55 dB
Cross Talk ..... 55 dB

FM Tuner Section

Frequency Range ..... 87.5 MHz to 108 MHz
Usable Sensitivity ..... Mono:11.2 dBf, IHF (1.0 µV/75 Ω)
50 dB Quieting Sensitivity ..... Mono:16.8 dBf
Stereo: 38.6 dBf
Signal-to-Noise Ratio ..... Mono:73 dB (at 85 dBf)
Stereo:70 dB (at 85 dBf)
Distortion ..... Stereo: 0.5 % (1 kHz)
Alternate Channel Selectivity ..... 60 dB (400 kHz)
Stereo Separation ..... 40 dB (1 kHz)
Frequency Response ..... 30 Hz to 15 kHz (±1) dB
Antenna Input ..... 75 Ω unbalanced

AM Tuner Section

Frequency Range ..... 531 kHz to 1,602 kHz (9 kHz step)
530 kHz to 1,700 kHz (10 kHz step)
Sensitivity (IHF, Loop antenna) ..... 350 µV/m
Selectivity ..... 25 dB
Signal-to-Noise Ratio ..... 50 dB
Antenna ..... Loop antenna

Miscellaneous

Power Requirements
U.S. and Canadian models ..... AC 120 V, 60 Hz
Multi-voltage model .. AC 110 V/120-127 V/220 V/240 V (Switchable), 50/60 Hz
Power Consumption
VSX-405
U.S. and Canadian models ..... 200 W, 300 VA
Multi-voltage model ..... 570 W
VSX-305 ..... 185W,290VA
In Standby Condition ..... 3 W
AC Outlet
U.S. and Canadian models
SWITCHED ..... 100 W (0.8 A) MAX
Multi-voltage model
SWITCHED ..... 100 W MAX
Dimensions ..... 420 (W) x 140 (H) x 328 (D) mm
16-9/16 (W) x 5-1/2 (H) x 12-15/16 (D) in
Weight (without package)
U.S. and Canadian models ..... 7.2 kg (15 lb 13 oz)
Multi-voltage model
VSX-405 ..... 7.5 kg (15lb 76oz)

Furnished Parts

FM Antenna 1
AM Loop Antenna 1
Dry Cell Batteries
[size "AA" (IEC R6)] 2
Remote Control Unit 1
Operating Instructions 1

NOTE:
Specifications and the design are subject to possible modifications without notice, due to improvements.